JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

BR-S822U/BR-S622U

BR-S822U

BR-S622U

S-VHS S-VHS ET Hi-Fi

SPECIFICATIONS

GENERAL

Format	:	VHS/S-VHS NTSC standard (S-VHS-C)
Power consumption	:	92 W
Dimensions	:	42.9 (W) X 18.8 (H) X 56.5 (D) cm (16-3/4" X 7-1/2" X 22-1/4")
Weight	:	23 kg (51 lbs)
Operating temperature	:	5°C to 40°C (41°F to 104°F)
Storage temperature	:	–20°C to 60°C (–4°F to 140°F)
Tape speed	:	33.35 mm/sec
Recording & Playback time	:	Max. 120 min. with JVC ST-120/T-120
Fast forward/ Rewind time	:	Less than 2.5 min. for 120 min. tape

VIDEO

Recording and playback	:	Rotary two-head helical scanning system
Luminance	:	FM recording
Color signal	:	Phase shift converted sub-carrier direct recording
Video signal system	:	NTSC-type color signal/NTSC-type Y/C signal
Input		
Line	:	1.0 Vp-p, 75 ohms, unbalanced
Y/C 358	:	Y: 1.0 Vp-p, 75 ohms, unbalanced C: 0.286 Vp-p, 75 ohms, unbalanced (Burst)
Output		
Line	:	1.0 Vp-p, 75 ohms, unbalanced
Y/C 358	:	Y: 1.0 Vp-p, 75 ohms, unbalanced C: 0.286 Vp-p, 75 ohms, unbalanced (Burst)
Signal-to-noise ratio	:	More than 47 dB (S-VHS) More than 46 dB (VHS)
Horizontal resolution	:	More than 400 lines (S-VHS) More than 240 lines (VHS)
Reference video input	:	1.0 Vp-p, 75 ohms, unbalanced (with loop-through, with the SA-T22U)
External sync input	:	0.5 to 4.0 Vp-p, 75 ohms, unbalanced (with one loop-through, without the SA-T22U)

AUDIO

Input		
Line	:	–6/0/+4 dBs, 10 k-ohms/600 ohms, balanced (Hi-Fi/Normal)
Mic	:	–67 dBs, 10 k-ohms, unbalanced
Output		
Line	:	–6/0/+4 dBs, Low impedance, balanced (Hi-Fi/Normal)
Monitor	:	–6 dBs, Low impedance, unbalanced
Phones	:	∞ to –17 dBs, 8 ohms
Signal-to-noise ratio	:	More than 44 dB (NR-off, Normal at 3% distortion)
Dynamic range	:	More than 90 dB (Hi-Fi)
Frequency response	:	20 to 20,000 Hz (Hi-Fi) 40 to 12,000 Hz (Normal)
Wow & flutter	:	Less than 0.005% WRMS (Hi-Fi) Less than 0.25% RMS (Normal)

TIME CODE

Input	:	0 dB ± 6 dBs, 10 k-ohms, unbalanced
Output	:	0 dB ± 3 dBs, Low impedance, unbalanced

CONNECTORS

Video		
Line input	:	BNC-type connector
Line output	:	BNC-type connectors
Y/C 358 input/output	:	7-pin connectors
Monitor	:	BNC-type connector
Audio		
Hi-Fi input/ output	:	XLR connectors
Normal input/ output	:	XLR connectors
Monitor	:	RCA connector
Remote control	:	9-pin connector

ACCESSORIES

Provided accessories : 7-pin cable, (only the BR-S822U), Power Cord

Design and specifications subject to change without notice.

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No. 9246B
July 1992

SECTION 4
DIAGRAMS AND CIRCUIT BOARDS

Board No.	Board Name	Page of diagram		
		Block diagram	Schematic diagram	Circuit board
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0 2	MOTHER-2	—	4-22, 23	4-24
0 3	SLOT MOTHER	—	4-26	4-25, 4-26
0 4	SYSCON MOTHER	—	4-26	4-25
0 5	FUSE	—	4-25	4-25
1 0	REC/PB Y	4-8	4-28, 29	4-30
1 2	REC/PB C (CTC DL, CNR DL INC.)	4-9	4-32, 33	4-31
1 5	PRE/REC	—	4-45	4-45
1 6	R/P ADJUST	4-10	4-34	4-37
1 7	Y COMB (1H DELAY 4FSC INC.)	4-12	4-38	4-41
1 9	OUTPUT	4-11	4-42, 43	4-44
2 0	FM/A PRE/REC	4-14	4-45	4-45
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2 4	AUDIO-4 (XLR	4-15	4-57	4-58
2 5	AUDIO-5)	4-15	4-57	4-58
2 6	AUDIO-6 (2 7 JACK, 2 8 VR INC.)	4-15	4-59	4-60
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4 5	COUNTER DISPLAY	—	4-70	4-69
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6 1	TBC-2	8-16	8-24, 25	8-26
6 2	TBC-3	8-17	8-27~29	8-30, 31
7 4	REAR-4	—	8-32	8-32
7 1	REAR-1 (7 2 -2, 7 3 -3 INC.)	4-15	4-72	4-73
8 0	METER (8 1 SWITCH, 8 2 TRACKING VR INC.)	4-15	4-75	4-75
8 3	SUB PANEL (8 4 TP TERMINAL INC.)	—	4-74	4-74
9 1	DECK TERMINAL (9 2 -2 INC.)	—	4-27	4-27
9 3	CASSETTE HOUSING	—	—	4-27

THE TREASURE CHEST CORP.

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Over 3,825 TV problems and solutions are listed in a professionally prepared booklet. Virtually all cures listed are down to the component level. Included are many "tough dogs" plus repeat failures. Listed by Brand, Model/Chassis, SAMS, Symptom, and Cure. Reference to SAMS for hard-to-identify orphan sets also included for many cases. Satisfaction is assured (10-day return privilege). Price is only $66.00 plus $3.85 shipping. Maryland buyers must add $3.30 Sales tax. Booklets are usually sent the day your order arrives. Send money order or check to: Mike's Repair Service, P.O. Box 217, Aberdeen Proving Ground, MD 21005-0217 (same mailing address for 39+ years). For phone inquiries, call Mike at (410) 272-4984 or 800-2FIXTVS (valid from U.S. & Canada) from 11 AM to 9 PM (Eastern Time). VISA, Mastercard, Discover and American Express are accepted. Previous volumes and supplements have been sold in all 50 states, DC and 15 foreign countries. Note: Sample histories shown here have been shortened in order to present more examples. The data in the booklet are generally in more detail. The comments shown are unsolicited from customers of previous booklets. New buyers are automatically added to our mailing list for notification of future supplements.

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POC: Mrs. Sue Evans, (410 272-5000) - 9 AM to 3 PM (Mon – Fri)

14,950 Volumes & Supplements sold since 1990 with only 2 returned for a refund.

Sample Selections

Brand	Model	SAMS	Symptom	Cure
GE	TX825TB	3484	Dead.	TP15 (may check ok).
GE	19GT319	3961*	Dead.	CR4110.
GE	CTC203CF3	4679	Dead, relay clicks.	R14103 (1 meg).
Goldstar	NC-96X1	3408*	Low, distorted audio.	R612 (47K).
Hitachi	32CX38B	4034	intermittent start-up.	D744 (zener diode).
JVC	AV-36980	4239	Dead.	C926 (1000 mfd).
Magnavox	25P6-01	3564*	Severely stretched vertical.	R543 (1 meg).
Magnavox	27Y1-00	3674	Dark, negative picture.	R468 (1 ohm).
Magnavox	27B5-11	3835*	Intermittent horizontal tearing.	C511 (.0091 mfd @ 1.6KV).
Magnavox	27B8-00	3965*	Intermittent start-up.	R457.
Orion	TV-1928	4192*	Dead, relay clicks twice.	Horizontal driver transformer.
Panasonic	27G13W	4070	Snowy picture after warm-up.	IC101 (AN5165K).
Panasonic	CT-36D20B	4515	Dead.	IC803, Q802.
RCA	TX862ZD	4000	Dead, fuse ok.	DR05.
RCA	CTC197	4042	Excessive width.	Q14802.
RCA	CTC203AX1	4183*	Red screen.	R15101 (10K).

Alabama	*"Your tips are the best I've ever seen." "I have enjoyed your booklet and it has made money for me." "The first day, it paid for itself." "Out of all the repair tips we've ordered over the past years, yours has been the most helpful so far."*
Arizona	*"These are terrific books." "Your TV Case Histories book has helped me a lot and has paid for itself."*
California	*"Received Volume 8. I fixed 4 TV's on the spot." "Much better than the XX-XXX garbage!!"*
Connecticut	*"Your Case Histories book that I purchased was excellent and I would like to purchase your newest one."*
Florida	*"I go for your books first before troubleshooting." "I've had more than $3,000 worth of repairs since getting your book 8 months ago." "Your books are my bibles." "One of your Zenith tips really bailed me out."*
Georgia	*"First day and it has already paid for itself." "I've already gotten 8-10 repairs from Volume 9."*
Illinois	*"Our company must have saved $20,000 labor by checking the books first before servicing the TVs." "I got more out of your books than the other data bases on diskettes." "Your books are fantastic. I've saved a lot of $ using them."*
Louisiana	*"Your book paid for itself within 15 minutes of taking it out of the mailbox." "Your case histories are the best organized and the most thorough that I have found." "We get more help from your books than any other books on the market."*
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Michigan	*"Yours are the best I've ever seen. Had the book for only 3 weeks and solved 2 problems. The other books are just pretenders compared to yours." " I have 2 of your problem solving booklets and these have proven to be invaluable."*
Minnesota	*"Your Case Histories have helped us repair the wide variety of TV's that we receive in our shop."*
Missouri	*"My technicians love your book." "I absolutely would not run a shop without your books. If anyone wanted to borrow mine, I'd ask for $1,000 deposit." "The tips are wonderful and valuable." "They are the best tech tips."*
New Mexico	*"I thought I knew a lot about TV repairs until I read your booklet! Please send me the next supplement COD."*

Brand	Model	SAMS	Symptom	Cure
Samsung	KCT52A	3785	High voltage comes up, then dead.	C414 (680 pF).
Sanyo	DS25250	3469*	Runs for 2 seconds then off.	R474, D474.
Sanyo	DS25380	4161	No tuner action.	IC101 (LA7670N).
Sanyo	DS27910	4741	Dead.	Q605 (leaky).
Sharp	25G-M60	3578	No vertical sweep.	IC2002 (EEPROM).
Sharp	19G-M80	3647	Dead, fuse ok.	IC2702 (EEPROM).
Sharp	27L-S100	4231	Dead, relay clicks.	D713 (zener diode).
Sony	KV-20S40	4096	Dead, fuse ok.	IC002.
Sony	KV-32V40	4221*	Hourglass shape.	IC501.
Sony	KV-32FS12	4422	Bright screen followed by shutdown.	IC702 (TDA6108JF).
Symphonic	TVCR9GE1	----	Dead, fuses ok.	IC651 (LA7806).
Toshiba	TAC9540	3777*	Dead.	Q101, Q421.
Zenith	SY1931G	3813	No green.	Q2206.
Zenith	SY2053S2	3820	No raster.	RX3277, C5105,
Zenith	B27A76R5	4480	High voltage rises to 5 KV, then dead.	Yoke.

*Similar to referenced SAMS.

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Ohio	*"I really enjoy these books and I like the format." "It's a gem." "Your book is worth its weight in gold."*
Oklahoma	*"It's been a real good book and I've saved buying a lot of Zenith modules using it." "Your data are the best I've seen."*
Oregon	*"I bought a competitor's book at $375 and yours is better." "I found your previous edition worth its weight in gold."*
Pennsylvania	*"Yours are the best of all I've bought." "Super book. Saved me hours and expensive equipment." "Because of your books, I can do 90% of TV's in-house and I save time and money." "It's paid for itself a 1,000 times over."*
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Texas	*"This book has been a lifesaver." "My business survives because of your books." "The books are quite user-Friendly and better than the stuff on computer diskettes." "I have bought other TIPS data and yours are better."*
Virginia	*"Your previous issue has been valuable to us and has paid for itself over and over again." "Your service is an absolute must. It combines the experience and knowledge of many and is a real time & money saver."*
West Virginia	*"Your books have done for me than the hundreds and hundreds of dollars worth of data I have on computer files." "It paid for itself the first hour. I fixed 3 I had on the shelf the same day." "Keep up the good work."*
Wisconsin	*"... really handy and paid for itself the first time." "Probably the most resourceful repair manual. It's a timesaver."*

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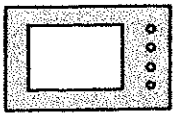
Cut Here



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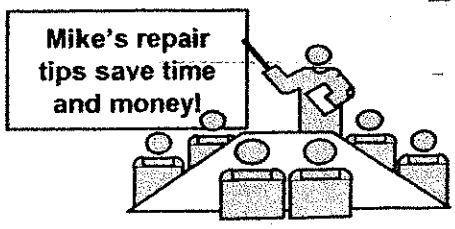
Maryland 21005-0217



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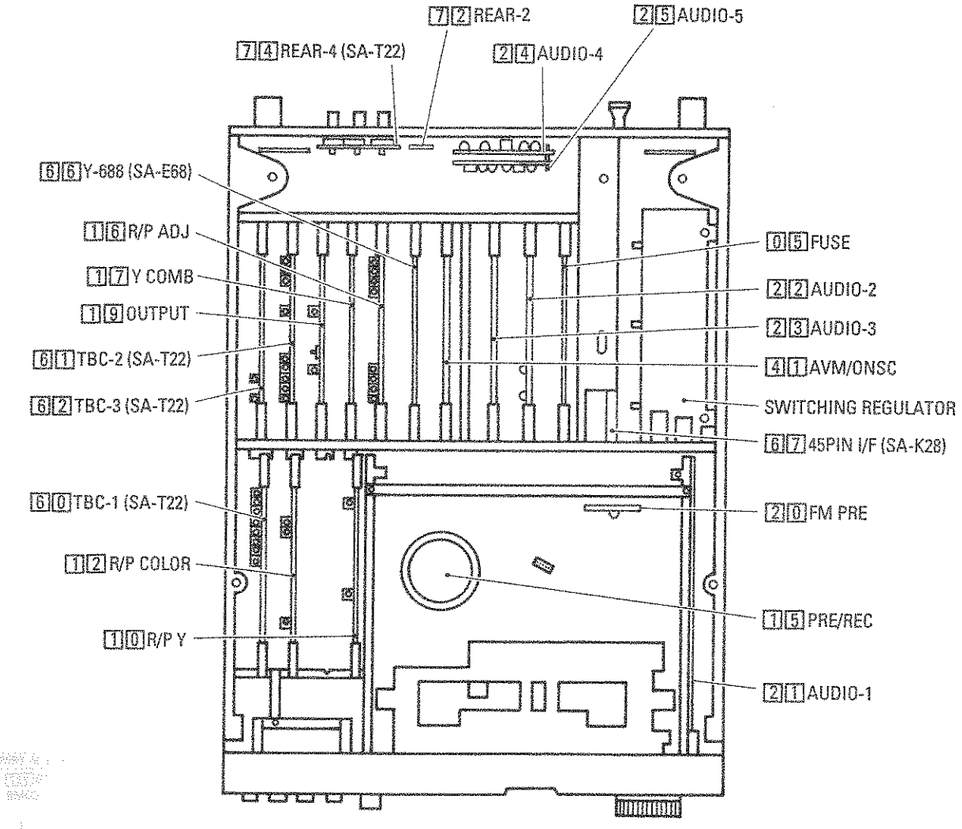
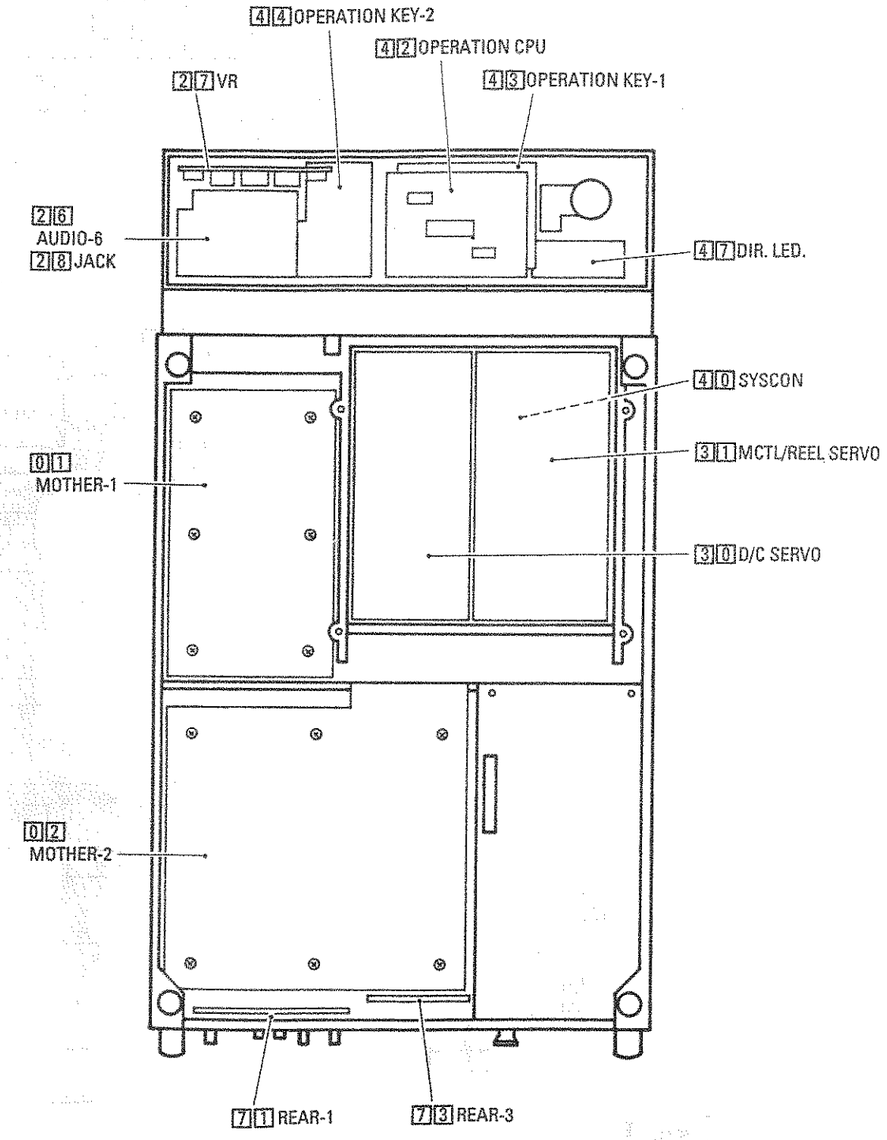
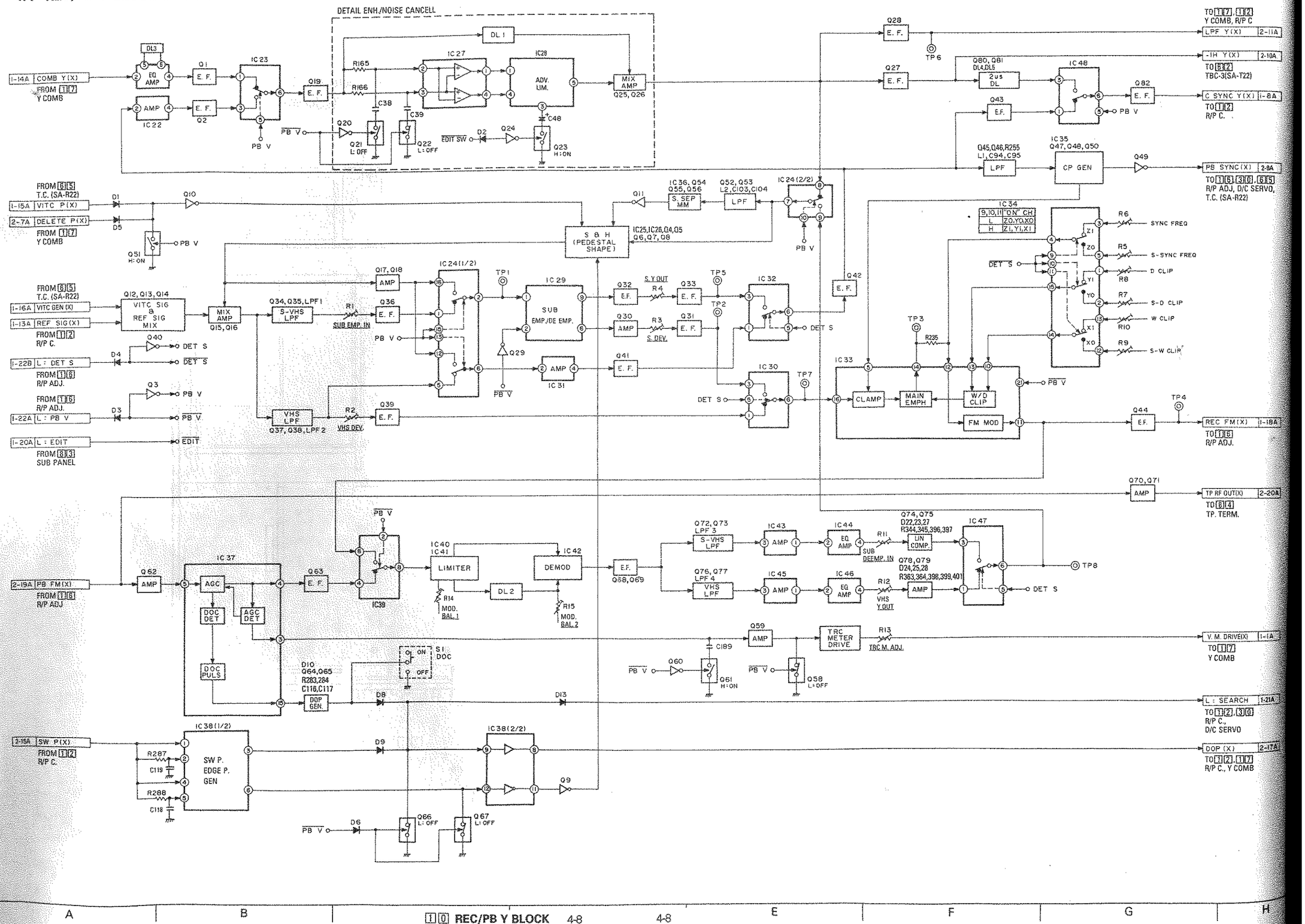
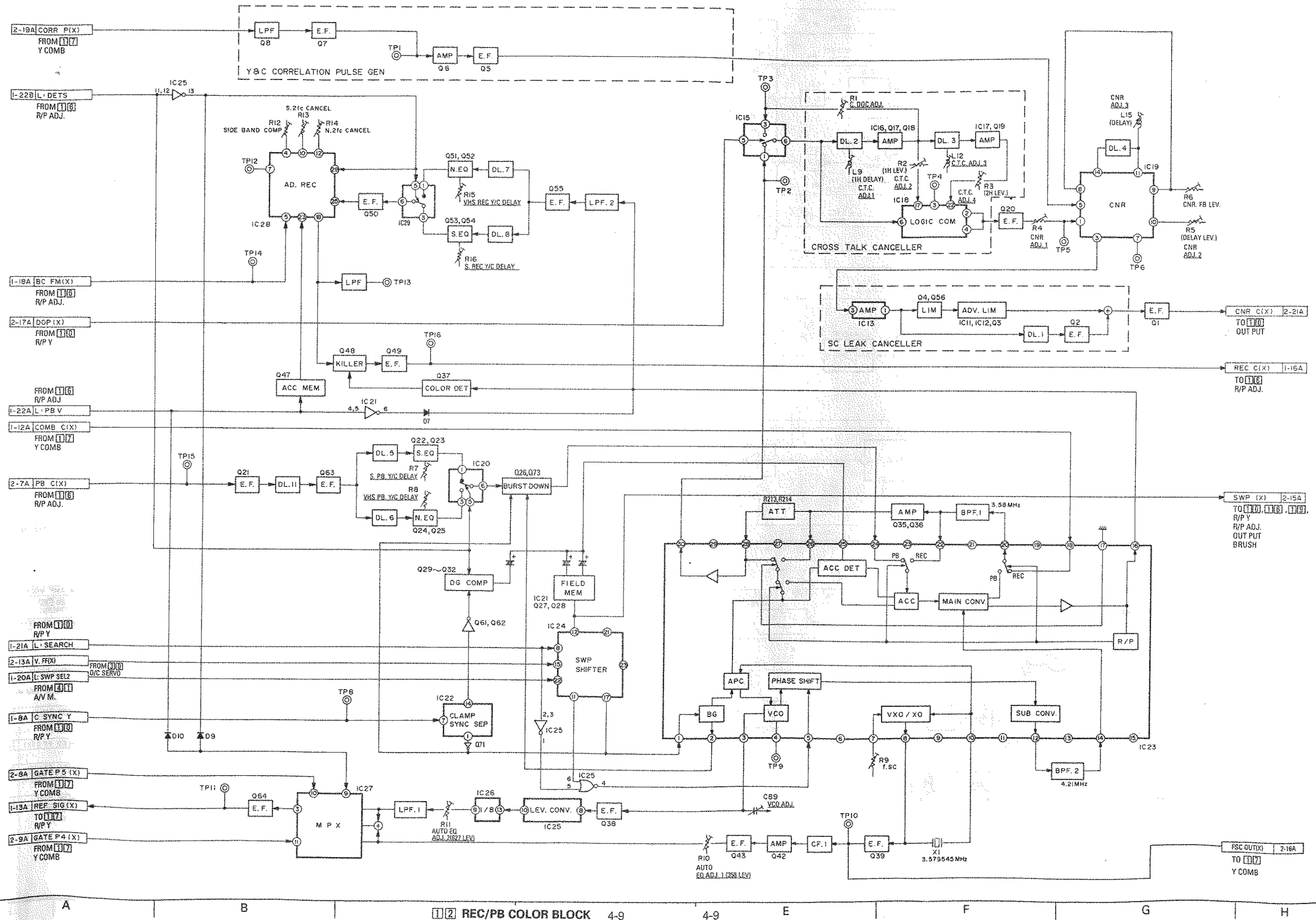

72 REAR-2
25 AUDIO-5
74 REAR-4 (SA-T22)
24 AUDIO-4
66 Y-688 (SA-E68)
16 R/P ADJ
17 Y COMB
19 OUTPUT
61 TBC-2 (SA-T22)
62 TBC-3 (SA-T22)
05 FUSE
22 AUDIO-2
23 AUDIO-3
41 AVM/ONSC
SWITCHING REGULATOR
67 45PIN I/F (SA-K28)
60 TBC-1 (SA-T22)
12 R/P COLOR
10 R/P Y
20 FM PRE
15 PRE/REC
21 AUDIO-1


44 OPERATION KEY-2
42 OPERATION CPU
43 OPERATION KEY-1
27 VR
26
AUDIO-6
28 JACK
47 DIR. LED.
40 SYSCON
31 MCTL/REEL SERVO
01
MOTHER-1
30 D/C SERVO
02
MOTHER-2
71 REAR-1
73 REAR-3

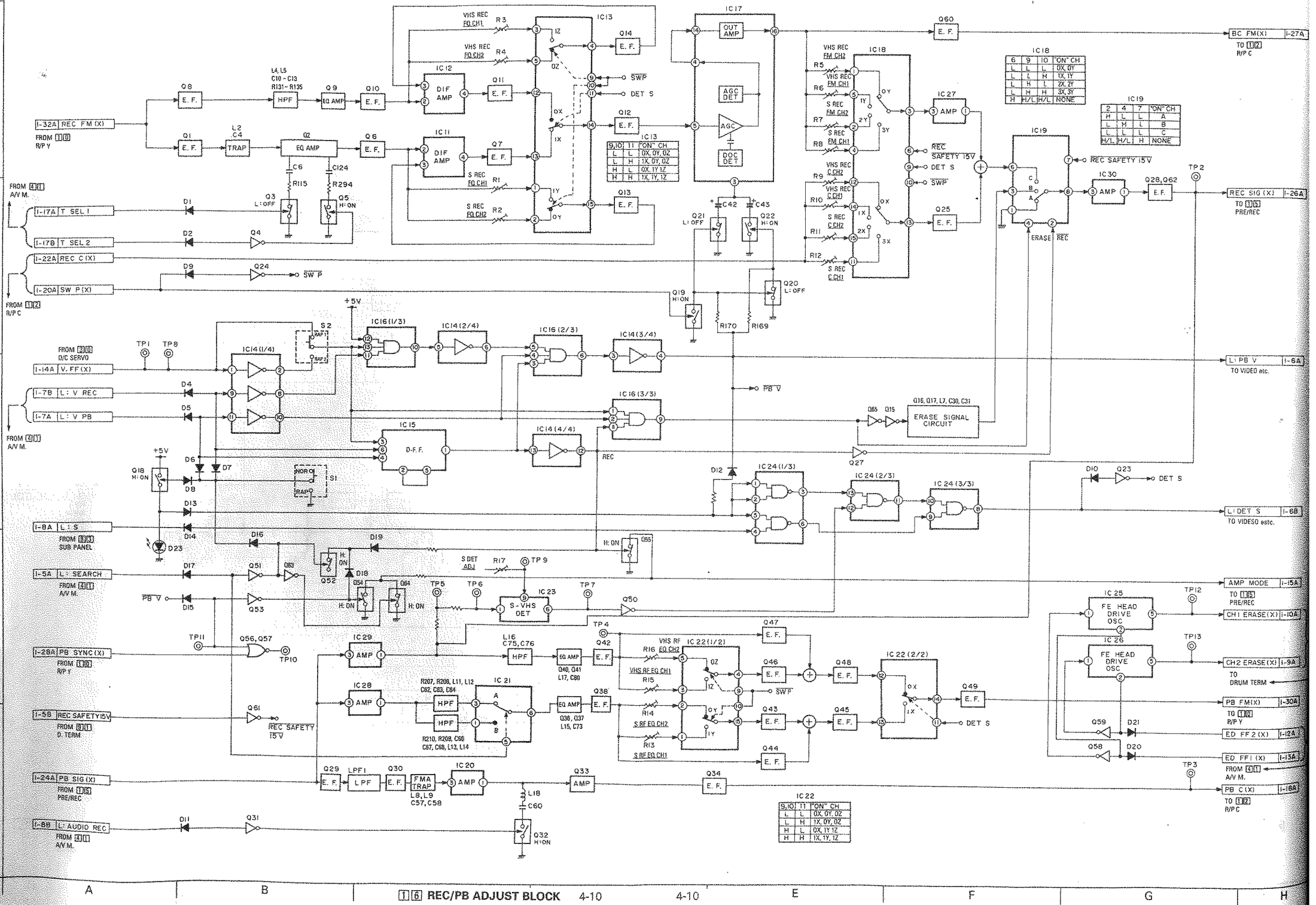
4.4 REC/PB Y BLOCK DIAGRAM



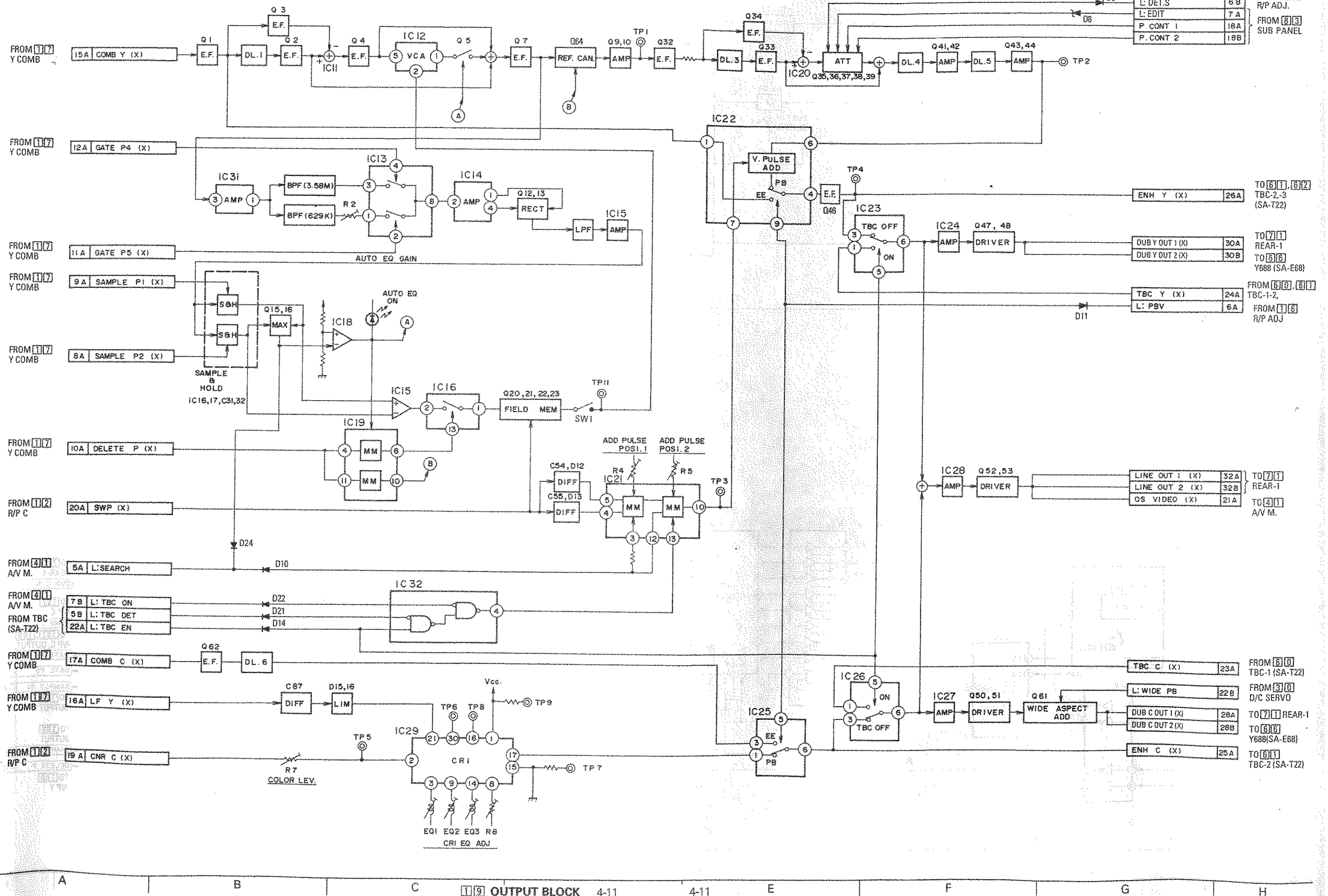
4.5 REC/PB COLOR BLOCK DIAGRAM



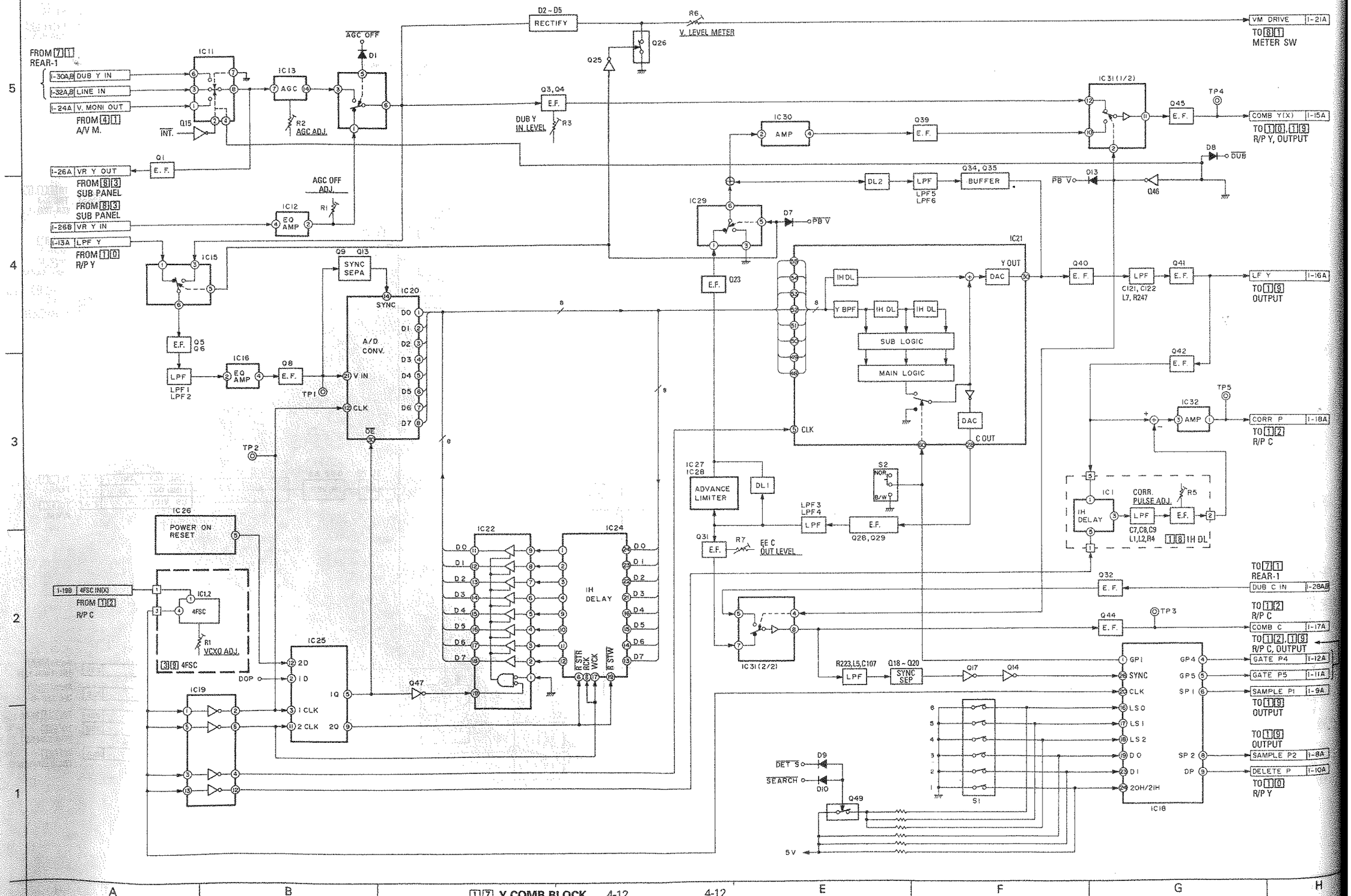
4.6 R/P ADJUST BLOCK DIAGRAM



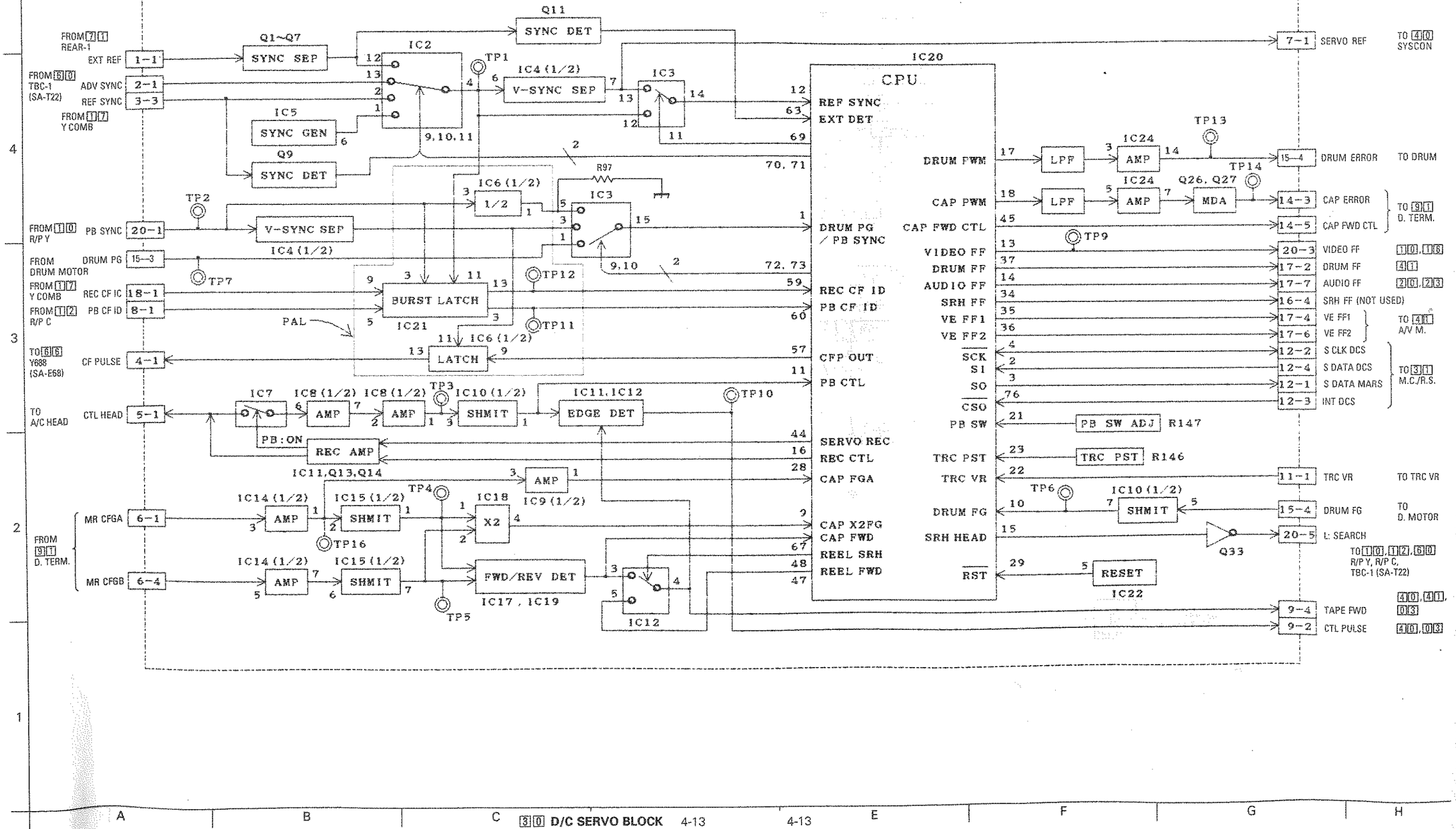
4.7 OUTPUT BLOCK DIAGRAM



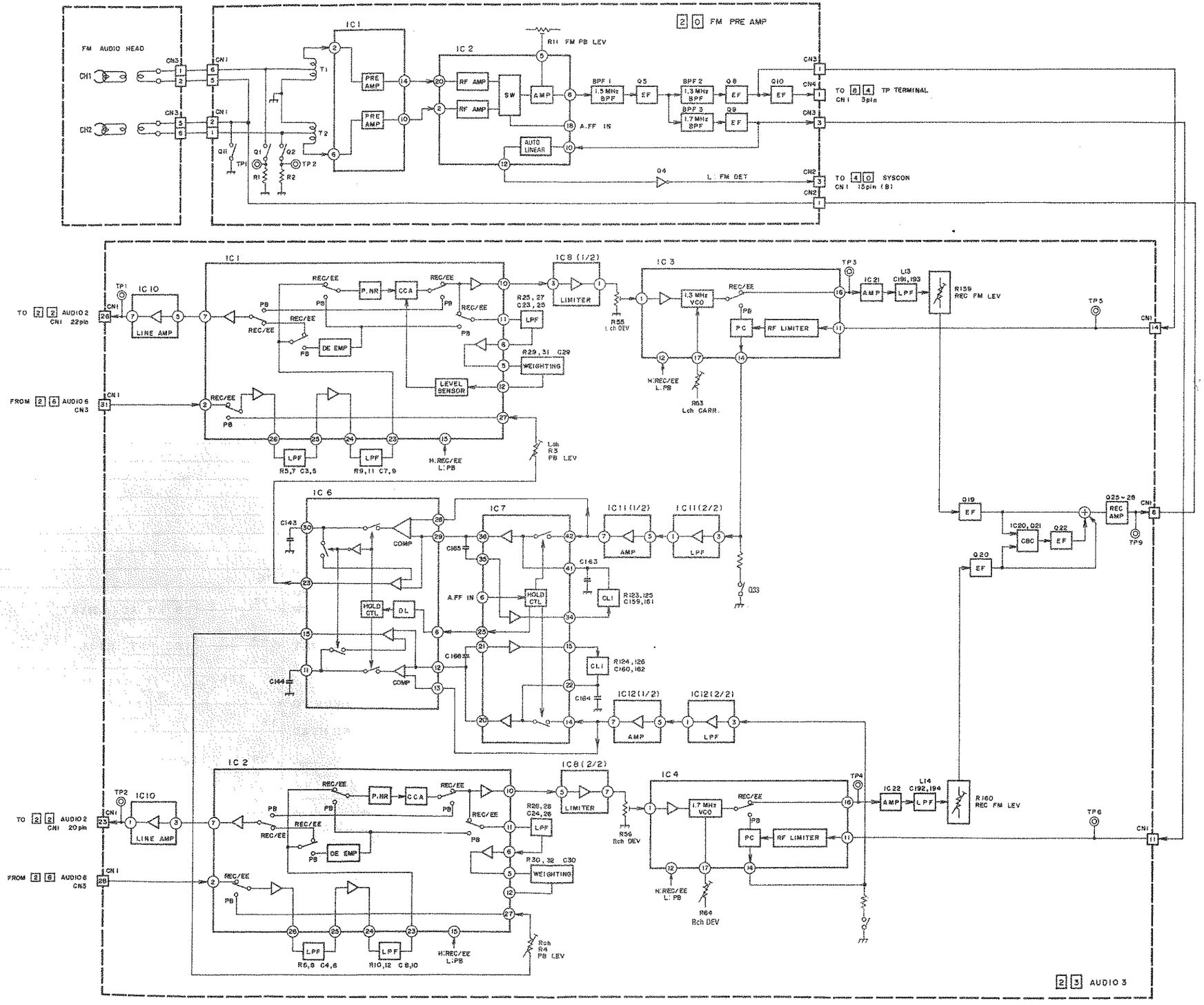
4.8 Y COMB BLOCK DIAGRAM



4.9 DRUM/CAPSTAN SERVO BLOCK DIAGRAM



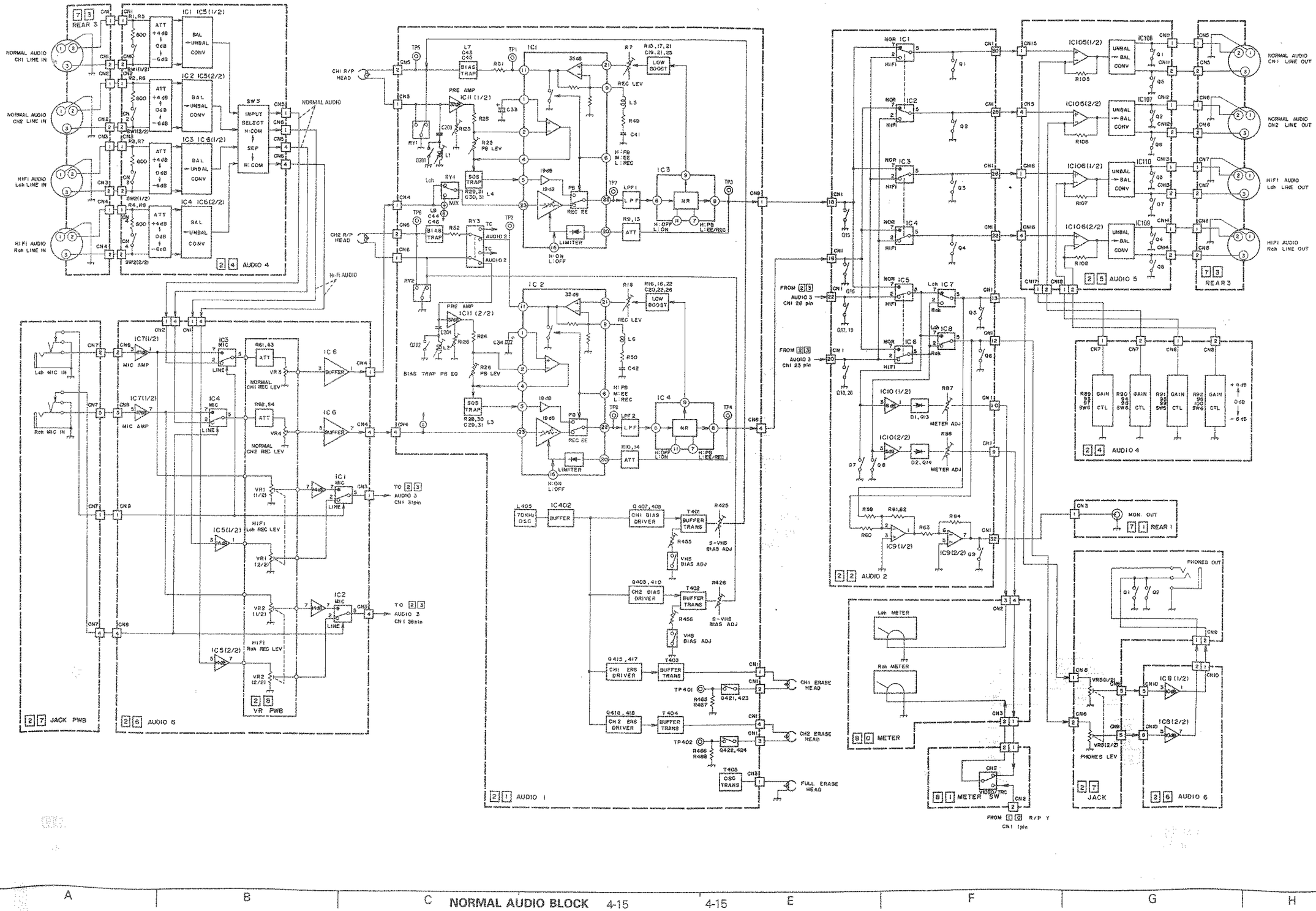
4.10 HiFi AUDIO BLOCK DIAGRAM



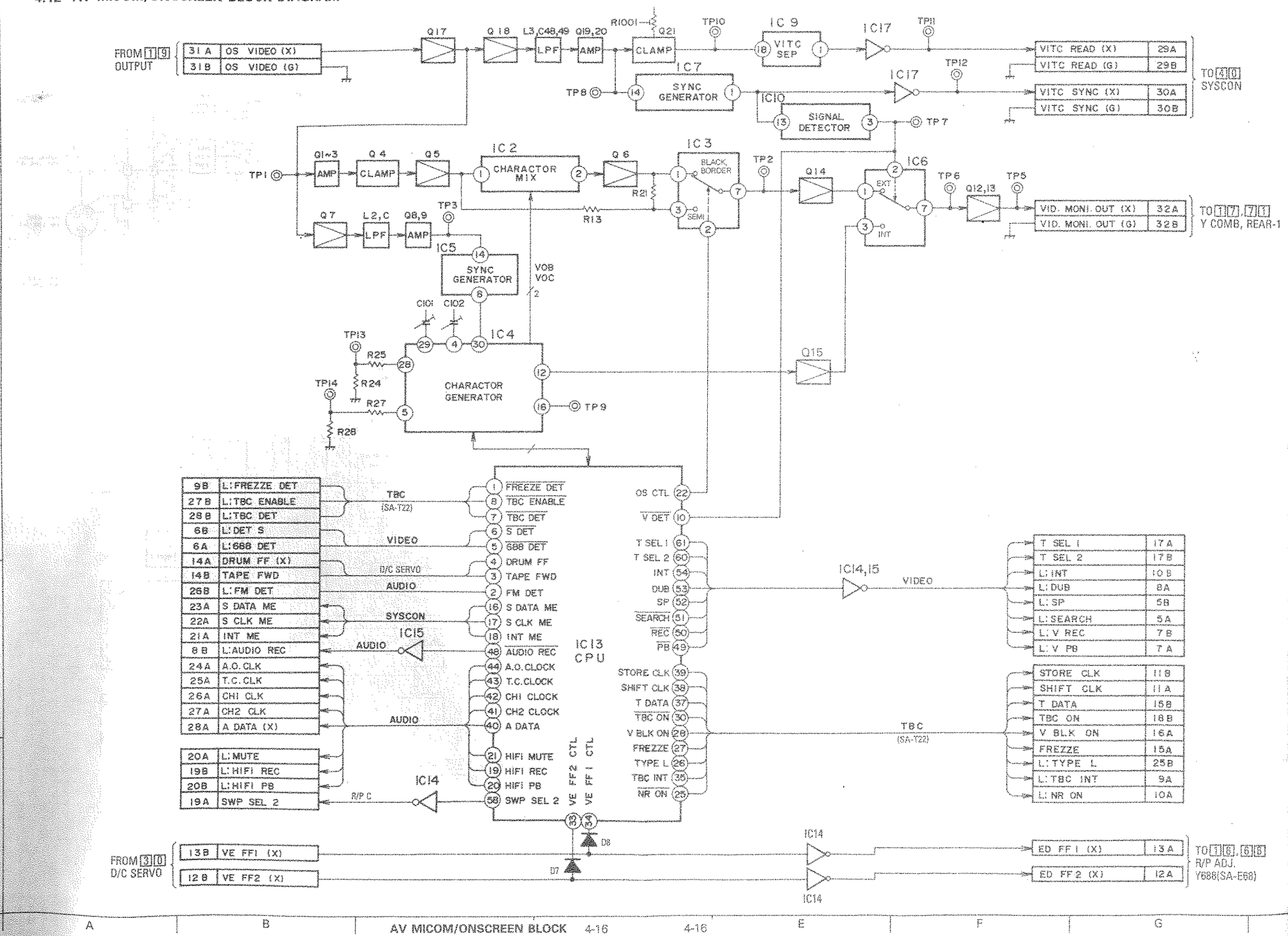
A B C D E F G H

HiFi AUDIO BLOCK 4-14 4-14

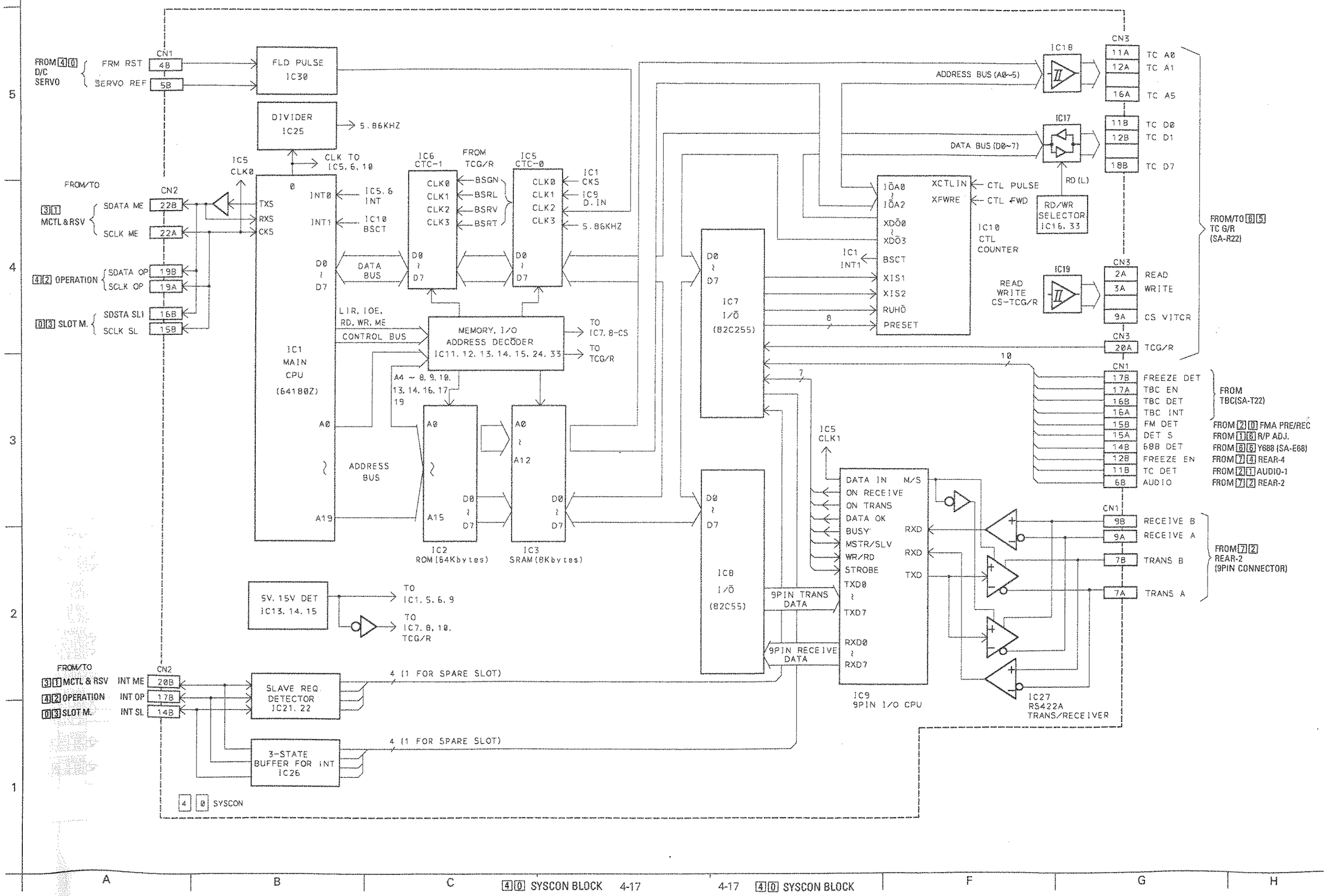
4.11 NORMAL AUDIO BLOCK DIAGRAM



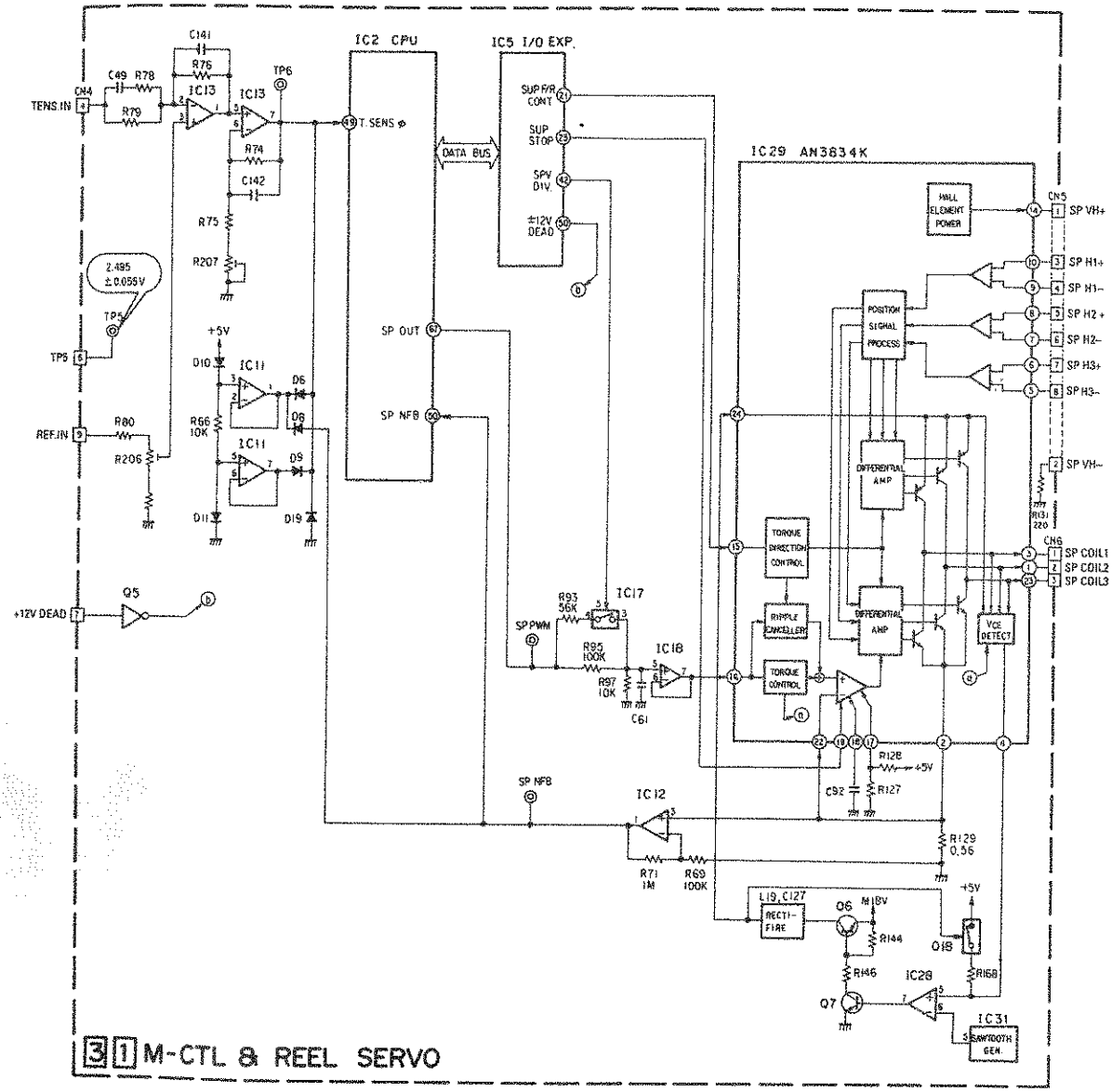
4.12 AV MICOM/ONSCREEN BLOCK DIAGRAM



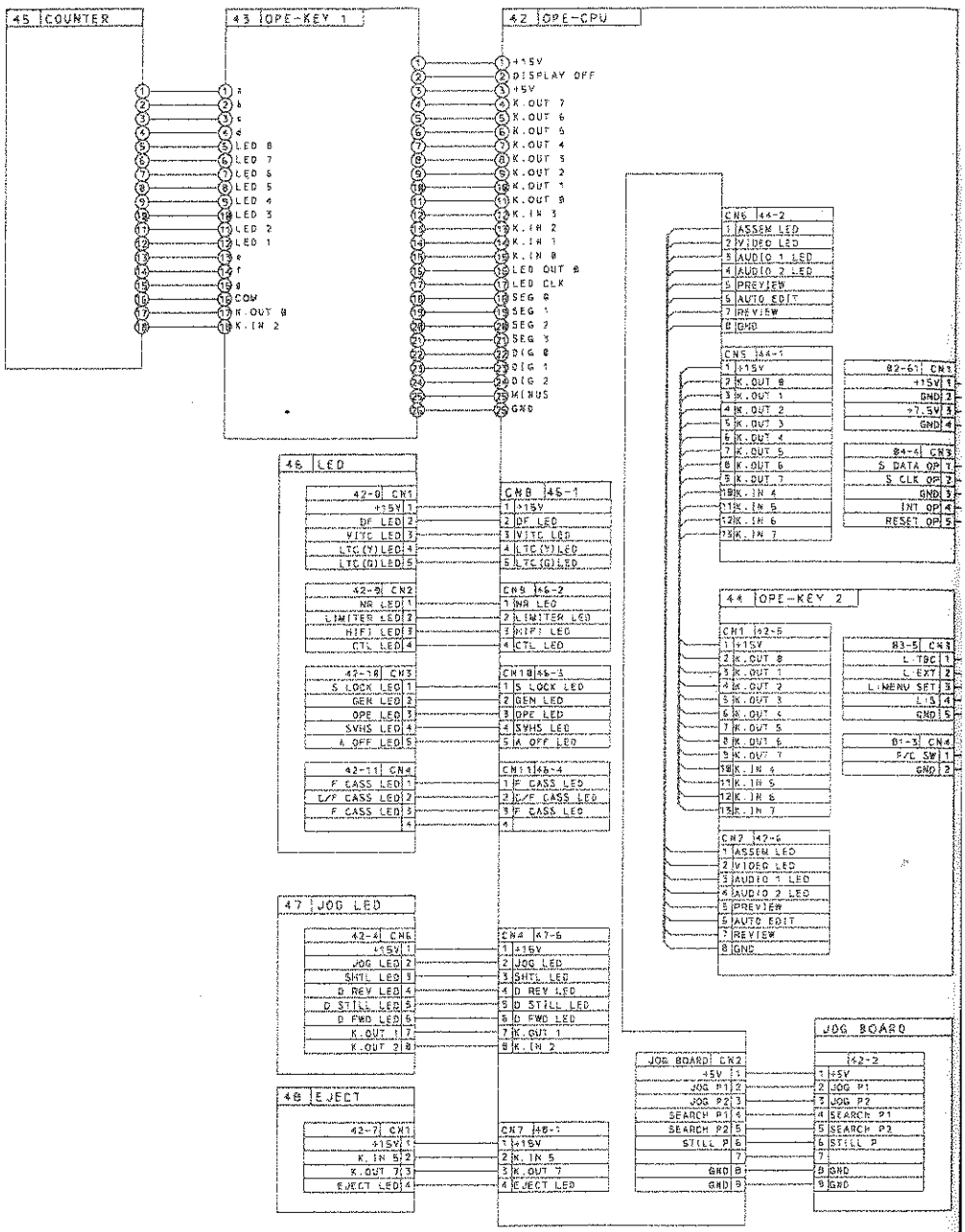
4.13 SYSCON BLOCK DIAGRAM

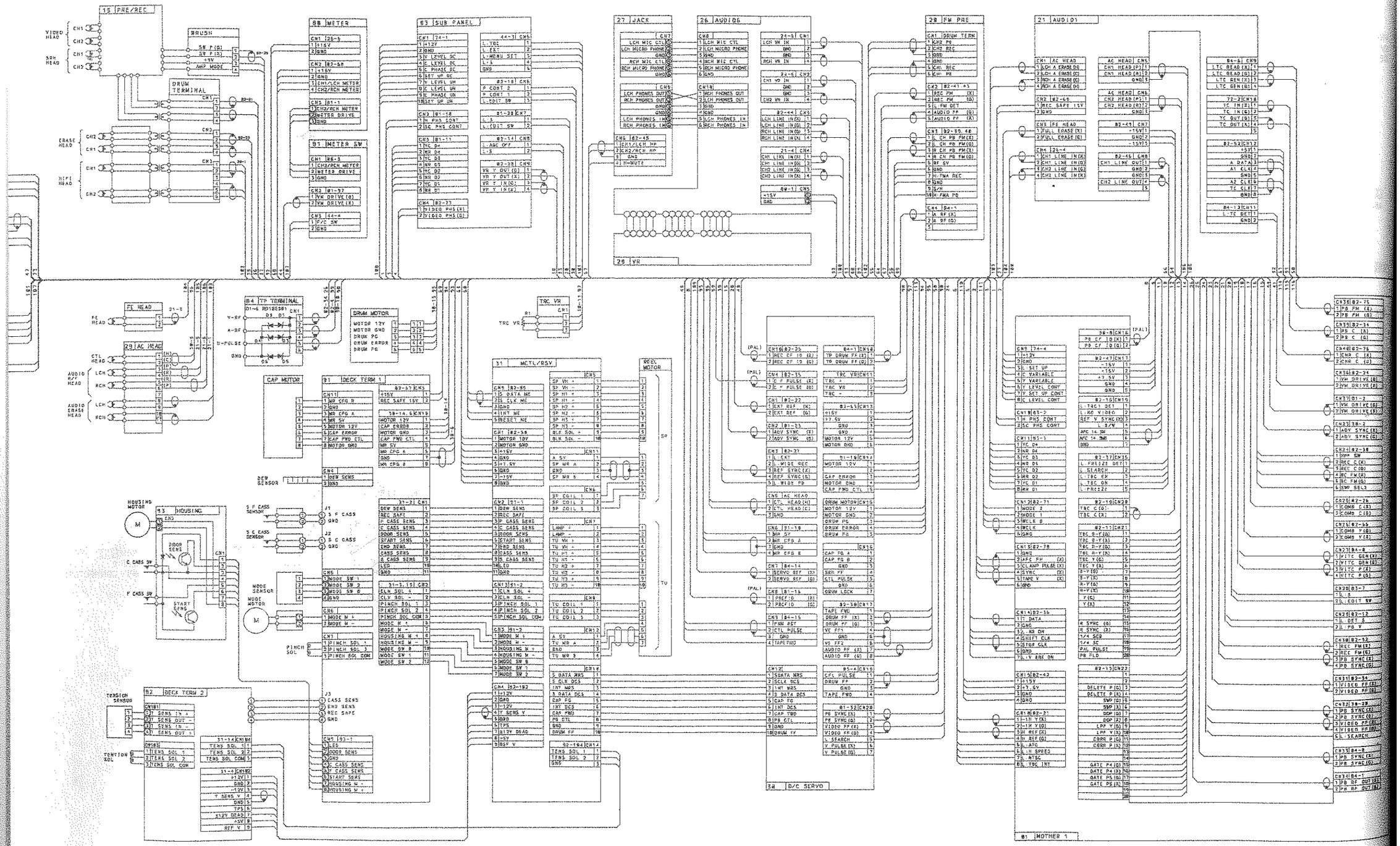


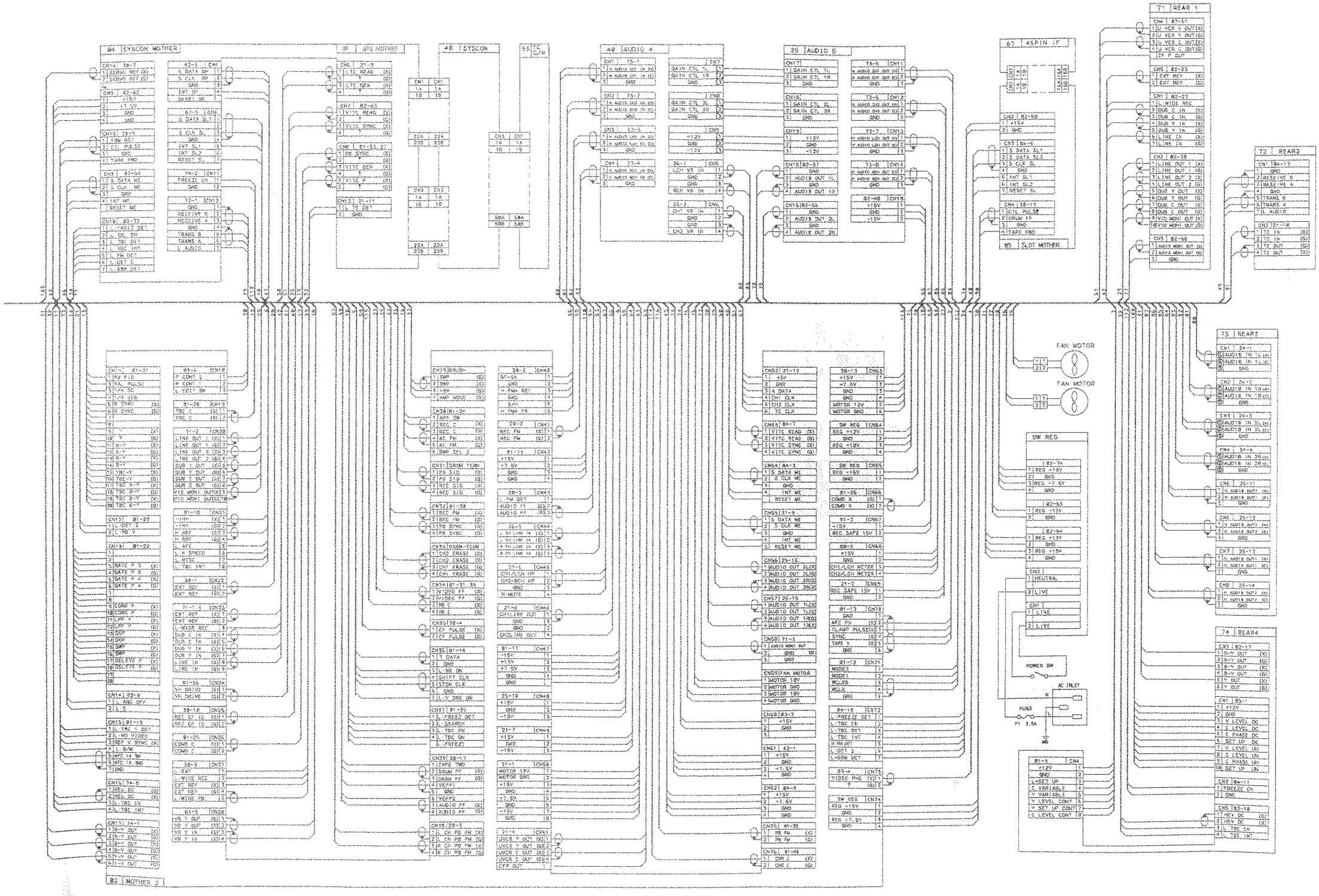
4.14 M-CTL & REEL SERVO BLOCK DIAGRAM



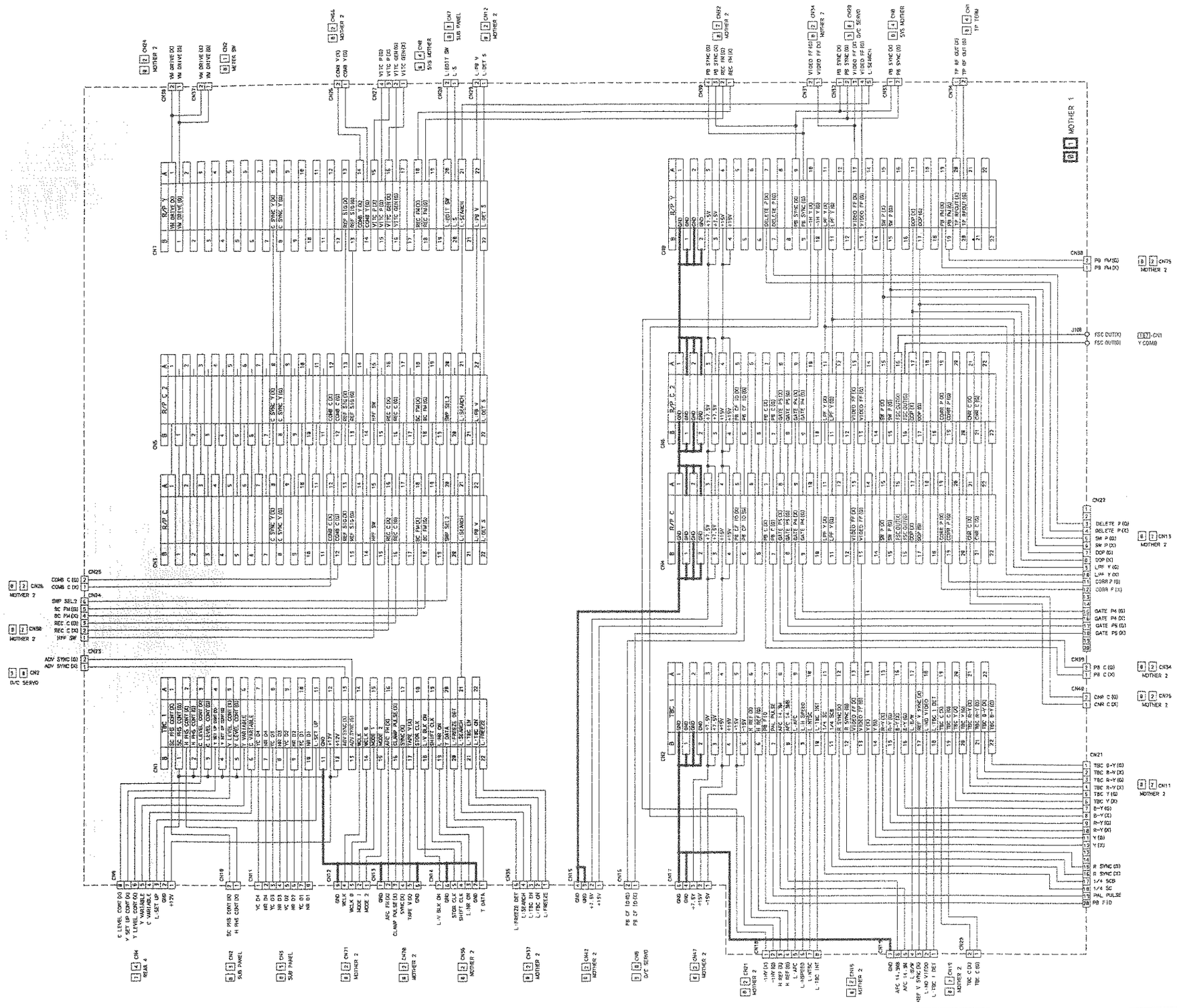
4.15 OVERALL WIRING DIAGRAM (BR-S822/BR-S622)




15 PRE/REC
BRUSH
VIDEO HEAD
ERASE HEAD
HI-FI HEAD
DRUM TERMINAL
89 METER
91 METER SW
83 SUB PANEL
27 JACK
26 AUDIO5
28 FM PRE
21 AUDIO1
FE HEAD
29 AC HEAD
84 TP TERMINAL
DRUM MOTOR
TRC VR
CAP MOTOR
91 DECK TERM 1
31 METL/ASY
REEL MOTOR
DEW SENSOR
HOUSING MOTOR
93 HOUSING
J1 S F CASS
J2 S C CASS
J3 CASS SENS
92 DECK TERM 2
TENSION SENSOR
TENSION SOL
34 D/C SERVO
81 MOTHER 1


44 SYSCON MOTHER
CN1A 36-7
SERVO REF (X)
SERVO REF (G)
CN3 82-66
+15V
+7.5V
GND
GND
CN15 28-9
FBK SET
CTL PULSE
GND
TAPE END
CN3 82-54
S DATA ME
S CLK ME
GND
INT ME
RESET ME
CN18 82-72
L VREF DET
L TBC DET
L TBC INT
L XM DET
L DET C
L SBB DET
42-3 CN4
S DATA SP
S CLK SP
GND
INT SP
RESET SP
82-3 CN5
S DATA SL
S CLK SL
GND
INT SL
RESET SL
74-2 CN11
FREEZE EN
GND
72-1 CN13
GND
RECEIVE B
RECEIVE A
GND
TRANS B
TRANS A
L AUDIO
SYS MOTHER
CN6 31-9
LTC READ (X)
LTC GEN (X)
CN7 82-55
VITC READ (X)
VITC SYNC (X)
CN8 81-30,32
PB SYNC (X)
VITC GEN (X)
VITC P (X)
CN12 21-11
L TC DET
GND
SYSCON
CN1 1A 1B
22A 22B
SBA SBB
TC U/F
AUDIO A
CN1 73-1
H AUDIO CH1 OUT (H)
H AUDIO CH1 OUT (G)
GND
CN2 73-2
H AUDIO CH2 OUT (H)
H AUDIO CH2 OUT (G)
GND
CN3 73-4
H AUDIO LCH IN (H)
H AUDIO LCH IN (G)
GND
CN4 73-5
H AUDIO RCH IN (H)
H AUDIO RCH IN (G)
GND
CN7
GAIN CTL 1L
GAIN CTL 1R
GND
CN8
GAIN CTL 2L
GAIN CTL 2R
GND
CN9
+12V
GND
-12V
24-1 CN5
LCH VR IN
GND
GND
RCH VR IN
25-2 CN6
CH1 VR IN
GND
GND
CH2 VR IN
AUDIO B
25 AUDIO B
CN1 73-6
GAIN CTL 3L
GAIN CTL 3R
GND
CN2 73-7
GAIN CTL 4L
GAIN CTL 4R
GND
CN3 73-8
+12V
GND
-12V
24-2 CN5
CH1 VR IN
GND
GND
CH2 VR IN
CN4 73-5
H AUDIO CH1 OUT (H)
H AUDIO CH1 OUT (G)
GND
CN5 73-6
H AUDIO CH2 OUT (H)
H AUDIO CH2 OUT (G)
GND
CN6 73-7
H AUDIO LCH OUT (H)
H AUDIO LCH OUT (G)
GND
CN7 73-8
H AUDIO RCH OUT (H)
H AUDIO RCH OUT (G)
GND
25-1 CN5
LCH VR IN
GND
GND
RCH VR IN
25-2 CN6
CH1 VR IN
GND
GND
CH2 VR IN
CN15 82-57
GND
AUDIO OUT 1L
GND
AUDIO OUT 1R
CN16 82-55
GND
AUDIO OUT 2L
GND
AUDIO OUT 2R
83-48 CN18
+15V
GND
-15V
67 45PIN I/F
CN1 1A 1B
CN2 82-58
+15V
GND
CN3 84-5
S DATA SL1
S DATA SL2
S CLK SL
GND
INT SL1
INT SL2
RESET SL
CN4 33-14
CTL PULSE
DRUM FP
GND
TAPE FBK
95 SLOT MOTHER
71 REAR 1
CN4 82-51
U VCR Y OUT (X)
U VCR Y OUT (G)
U VCR C OUT (X)
U VCR C OUT (G)
CP P OUT
CN5 82-73
EXT REF (X)
EXT REF (G)
CN1 82-23
L WIDE REC
DUB C IN (X)
DUB C IN (G)
DUB Y IN (X)
DUB Y IN (G)
LINE IN (X)
LINE IN (G)
CN2 82-38
LINE OUT 1 (X)
LINE OUT 1 (G)
LINE OUT 2 (X)
LINE OUT 2 (G)
DUB Y OUT (X)
DUB Y OUT (G)
DUB C OUT (X)
DUB C OUT (G)
VID MON1 OUT (X)
VID MON1 OUT (G)
CN3 82-56
AUD1 MON1 OUT (X)
AUD1 MON1 OUT (G)
GND
72 REAR2
CN1 84-13
GND
RESERVE B
RESERVE A
GND
TRANS B
TRANS A
L AUDIO
CN3 21-18
TC IN (X)
TC IN (G)
TC OUT (G)
TC OUT (X)
73 REAR3
CN1 24-1
AUD1B IN 1L (H)
AUD1B IN 1L (G)
GND
CN2 24-2
AUD1B IN 1R (H)
AUD1B IN 1R (G)
GND
CN3 24-3
AUD1B IN 2L (H)
AUD1B IN 2L (G)
GND
CN4 24-4
AUD1B IN 2R (H)
AUD1B IN 2R (G)
GND
CN5 25-11
H AUDIO OUT1 (H)
H AUDIO OUT1 (G)
GND
CN6 25-12
H AUDIO OUT2 (H)
H AUDIO OUT2 (G)
GND
CN7 25-13
H AUDIO OUT1 (H)
H AUDIO OUT1 (G)
GND
CN8 25-14
H AUDIO OUT2 (H)
H AUDIO OUT2 (G)
GND
74 REAR4
CN3 82-17
R-Y OUT (X)
R-Y OUT (G)
B-Y OUT (X)
B-Y OUT (G)
Y OUT (X)
Y OUT (G)
CN1 83-1
+12V
GND
V LEVEL DC
H LEVEL DC
C PHASE DC
SET UP DC
V LEVEL UN
H LEVEL UN
C PHASE UN
SET UP UN
CN2 84-11
FREEZE EN
GND
CN5 82-12
HEV DC (G)
HEV DC (X)
TBC CN
TBC INT
MOTHER 1
CN1 81-21
PG FID
PA PULSE
12V SC
12V SCC
SYNC (X)
SYNC (G)
CN11 81-25
L DET C
PB V
CN31 81-22
GATE P 3 (X)
GATE P 5 (G)
GATE P 4 (X)
GATE P 4 (G)
CORR P (X)
CORR P (G)
REV Y (X)
REV Y (G)
DOP (X)
DOP (G)
SWP (X)
SWP (G)
DELEYE P (X)
DELEYE P (G)
CN14 83-8
L ABC OFF
L S
CN15 81-15
L TBC 1 DET
L NO VIDEO
INSERT V SYNC (X)
L 9/W
APC 14.3M
APC 7.16M
GND
CN15 74-5
HEU DC (X)
HEU DC (G)
L TBC EN
L TBC INT
CN17 34-1
R-Y OUT (X)
R-Y OUT (G)
B-Y OUT (X)
B-Y OUT (G)
Y-Y OUT (X)
Y-Y OUT (G)
83-9 CN19
P CONT 2
P CONT 1
L EDIT SW
81-26 CN19
TBC C (G)
TBC C (X)
71-2 CN23
LINE OUT 1 (X)
LINE OUT 1 (G)
LINE OUT 2 (X)
LINE OUT 2 (G)
DUB Y OUT (X)
DUB Y OUT (G)
DUB C OUT (X)
DUB C OUT (G)
VID MON1 OUT(X)
VID MON1 OUT(G)
81-16 CN21
-10V
+30V
H REF
H REF
L AFC
L P SPEED
L MTCK
L TBC INT
38-1 CN22
EXT SEL
EXT REF
71-5 CN23
EXT REF (X)
EXT REF (G)
L WIDE REC
DUB C IN (X)
DUB C IN (G)
DUB Y IN (X)
DUB Y IN (G)
LINE IN (X)
LINE IN (G)
81-36 CN24
VH DRIVE (X)
VH DRIVE (G)
38-16 CN25
REF CP ID (X)
REF CP ID (G)
81-35 CN26
COMB C (X)
COMB C (G)
38-5 CN27
L EXT
L WIDE REC
EXT REF1
EXT REF2
L WIDE 2B
83-7 CN28
VR V OUT (X)
VR V OUT (G)
VR V IN (X)
VR V IN (G)
CN2 BRUSH
SWP (G)
SWP (X)
+9V
LAMP MODE
CN3 81-24
HALF SW
REC C (X)
REC C (G)
REC PM (X)
REC PM (G)
SWP SEL 2
CN3 DRUM TERM
PB SIG (X)
PB SIG (G)
REC SIG (X)
REC SIG (G)
CN32 81-28
REC PM (X)
REC PM (G)
PB SYNC (X)
PB SYNC (G)
CN33 DRUM-TERM
CH2 ERASE (X)
CH2 ERASE (G)
CH1 ERASE (X)
CH1 ERASE (G)
CN34 81-31,33
VIDEO FF (X)
VIDEO FF (G)
PB C (X)
PB C (G)
CN35 38-11
CP PULSE (X)
CP PULSE (G)
CN35 81-14
LT DATA
GND
L NR ON
SHIST CLK
SHIFT CLK
L SBA
L SBB
L Y DRV ON
CN37 81-35
L FREEZ DET
L SEARCH
L TBC EN
L TBC ON
L FREEZE
CN39 38-17
TAPE TMD
DRUM FF (X)
DRUM FF (G)
VEFF1
GND
VEFF2
AUDIO FF (X)
AUDIO FF (G)
CN39 28-3
L CH PB FM (X)
L CH PB FM (G)
R CH PB FM (X)
R CH PB FM (G)
28-3 CN40
RF +5V
GND
H FM PB
GND
S/H
H FM PB
28-2 CN41
REC FM (X)
REC FM (G)
21-15 CN42
+7.5V
GND
GND
28-2 CN43
L FM DET
AUDIO FF (X)
AUDIO FF (G)
28-3 CN44
L CH LINE IN (X)
L CH LINE IN (G)
R CH LINE IN (X)
R CH LINE IN (G)
27-5 CN45
CH1/LCH HP
CH2/RCH HP
GND
H METER
21-12 CN46
CH1/LINE OUT
GND
GND
CH2/LINE OUT
81-17 CN47
-15V
+15V
+7.5V
GND
GND
25-19 CN48
+15V
GND
-15V
21-7 CN49
+15V
GND
-15V
31-1 CN50
MOTOR 18V
MOTOR GND
+15V
GND
+7.5V
GND
-15V
GND
71-4 CN51
UVCR Y OUT (X)
UVCR Y OUT (G)
UVCR C OUT (X)
UVCR C OUT (G)
CFP OUT
CN52 21-13
+5V
GND
A DATA
CH1 CLK
CH2 CLK
TC CLK
CN53 84-7
VITC READ (X)
VITC READ (G)
VITC SYNC (X)
VITC SYNC (G)
CN54 84-3
S DATA ME
S CLK ME
GND
INT ME
RESET ME
CN56 31-8
S DATA ME
S CLK ME
GND
INT ME
RESET ME
CN58 25-16
AUDIO OUT 2L(X)
AUDIO OUT 2L(G)
AUDIO OUT 2R(G)
AUDIO OUT 2R(X)
CN67 22-15
AUDIO OUT 1L(X)
AUDIO OUT 1L(G)
AUDIO OUT 1R(G)
AUDIO OUT 1R(X)
CN68 71-3
AUDIO MON1 OUT
GND
GND
CN69 FAN MOTOR
MOTOR 18V
MOTOR GND
MOTOR 18V
MOTOR GND
CN69 83-2
+15V
GND
CN71 42-1
+15V
GND
+7.5V
CN72 84-8
+15V
GND
-15V
CN75 81-38
PB PM (X)
PB PM (G)
CN76 81-48
CHR C (X)
CHR C (G)
38-13 CN83
+15V
+7.5V
GND
GND
MOTOR 12V
MOTOR GND
SW REG CN84
REG +12V
GND
REG +18V
GND
SW REG CN85
REG -15V
GND
81-25 CN86
COMB X (G)
COMB X (X)
91-3 CN87
-15V
REC SAFE 15V
88-2 CN88
+15V
GND
CH1/LCH METER
CH2/LCH METER
21-2 CN89
REC SAFE 15V
GND
81-13 CN78
GND
AFC FM (X)
CLAMP PULSE(X)
SYNC (X)
TAPE V (X)
GND
81-12 CN71
MODE2
MODE1
WCLKB
WCLK
GND
84-18 CN72
L FREEZE DET
L TBC ER
L TBC DET
L TBC INT
H FM DET
L DET S
L 480 DET
83-4 CN75
VIDEO PNS (X)
(G)
SW REG CN74
REG +15V
GND
REG -7.5V
GND
FAN MOTOR
FAN MOTOR
SW REG
82-74
REG +15V
GND
REG -7.5V
GND
82-65
REG -15V
GND
82-64
REG +12V
GND
REG +15V
GND
CN2
NEUTRAL
LIVE
CN1
LIVE
POWER SW
AC INLET
FUSE
P1 2.5A
GND
81-3 CN4
+12V
GND
H-SET UP
C VARIABLE
Y VARIABLE
V LEVEL CONT
V SET UP CONT
C LEVEL CONT

4.16 MOTHER BOARD-1 SCHEMATIC DIAGRAM



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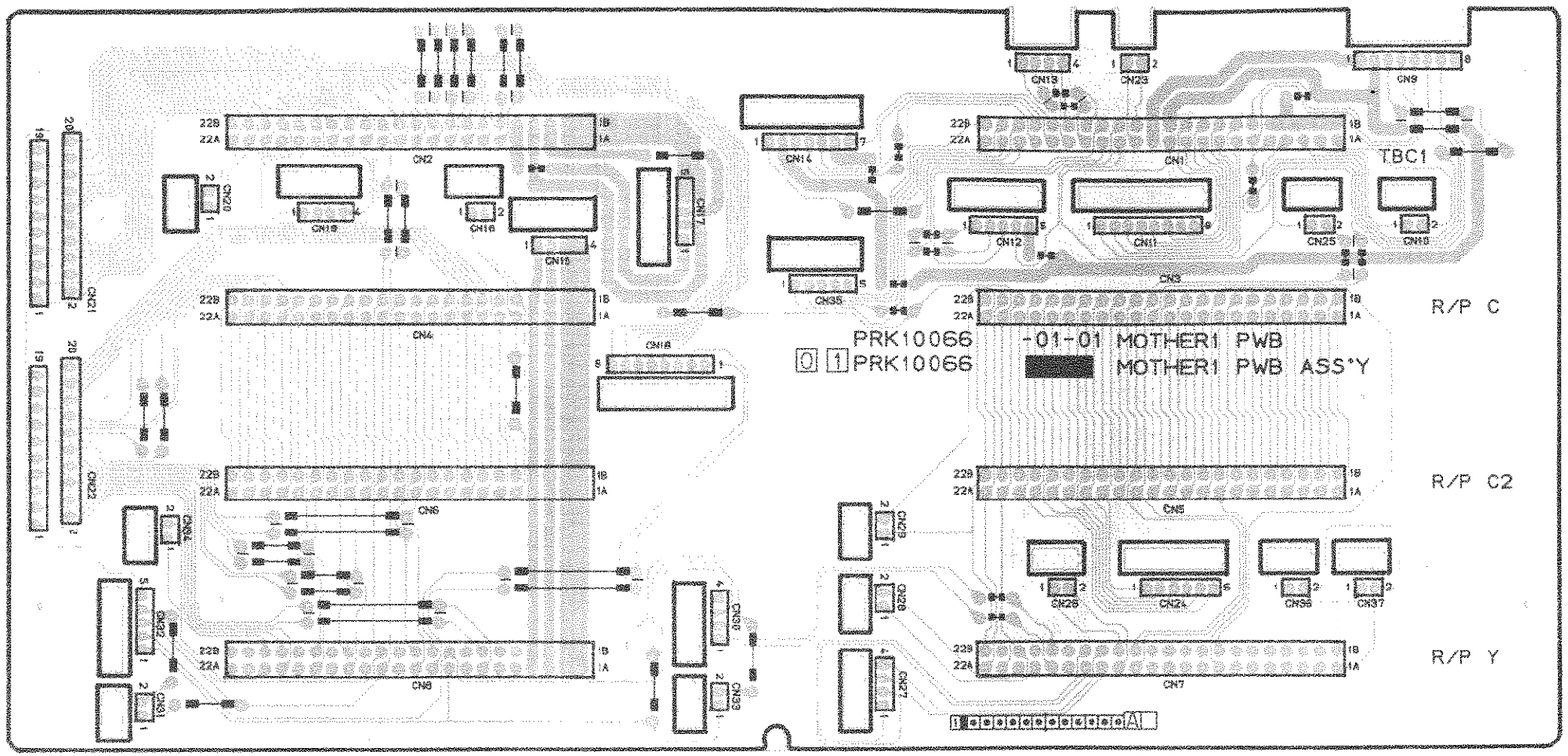
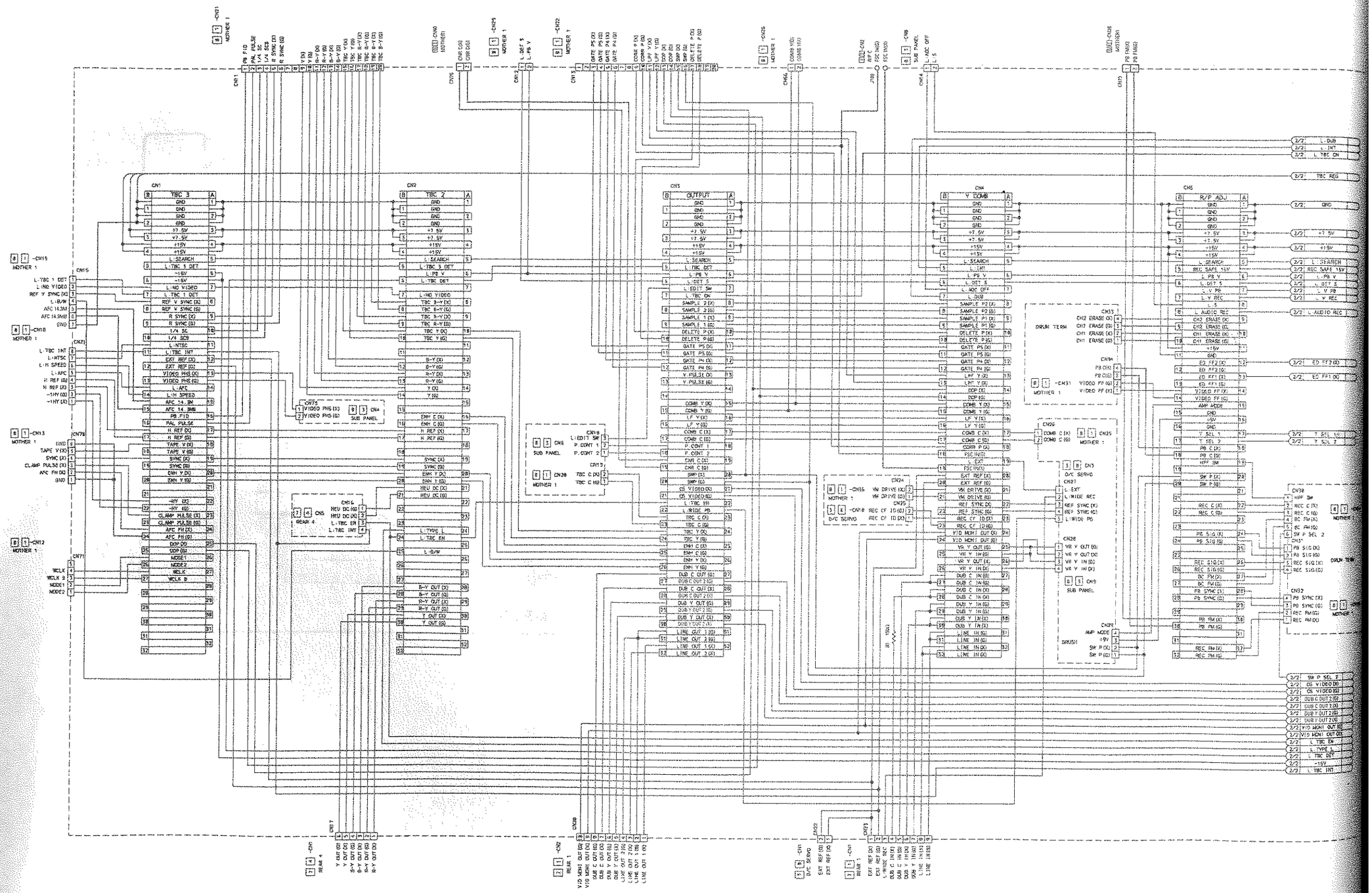
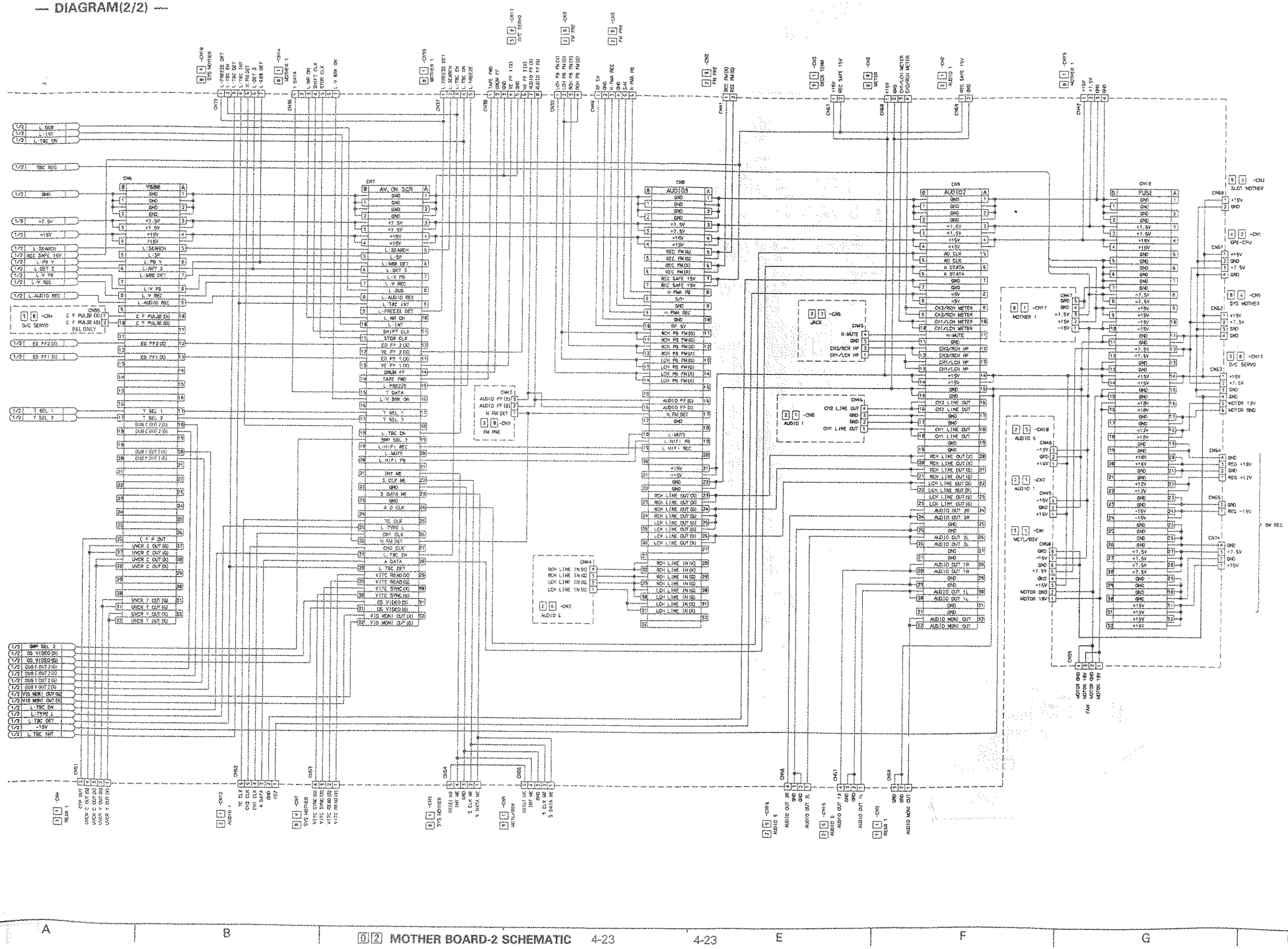
4.17 MOTHER BOARD-1 CIRCUIT BOARD (BR-S822/BR-S622)



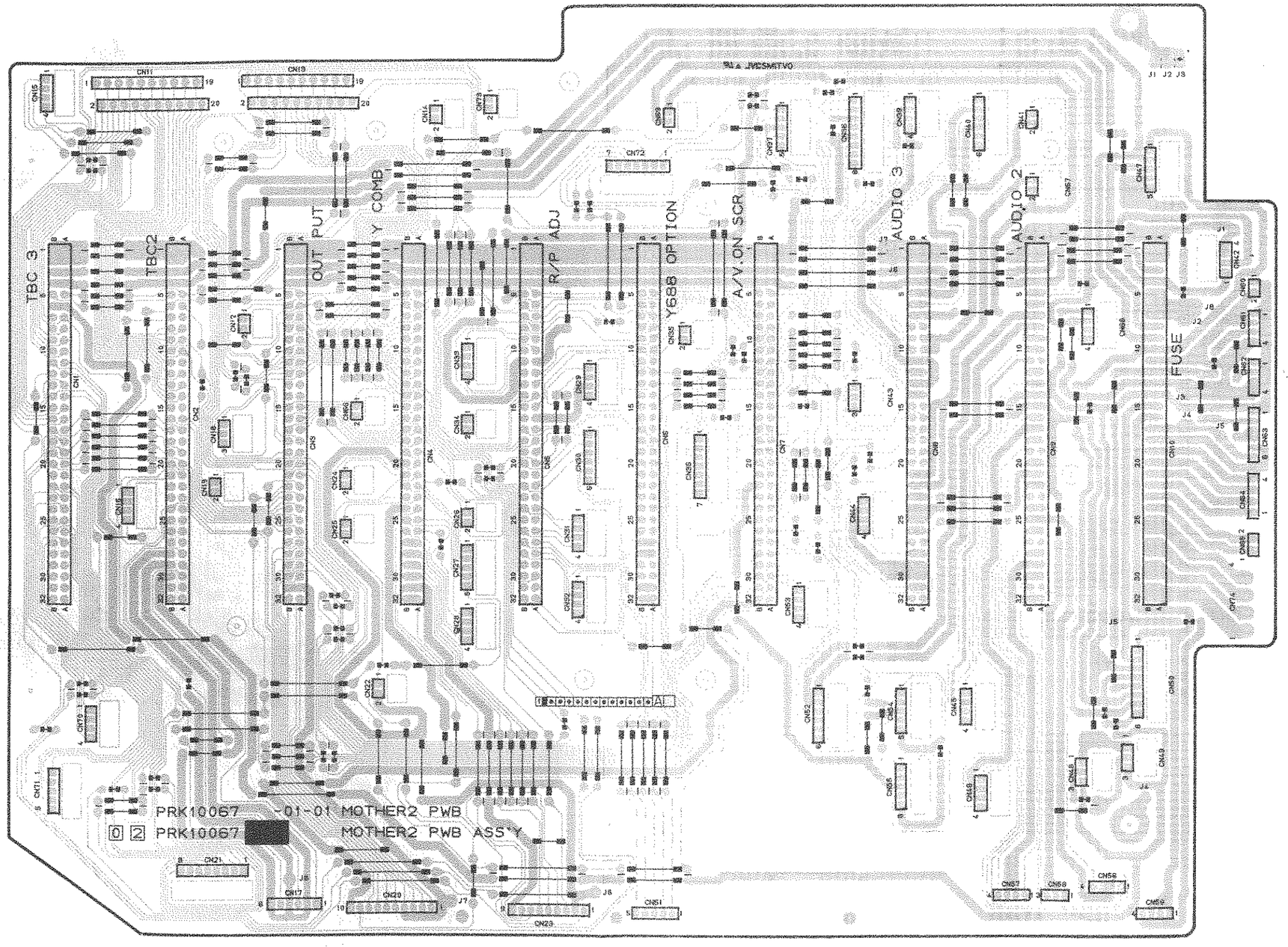
4.18 MOTHER BOARD-2 SCHEMATIC DIAGRAM (BR-S822/BR-S622)

— DIAGRAM(1/2) —

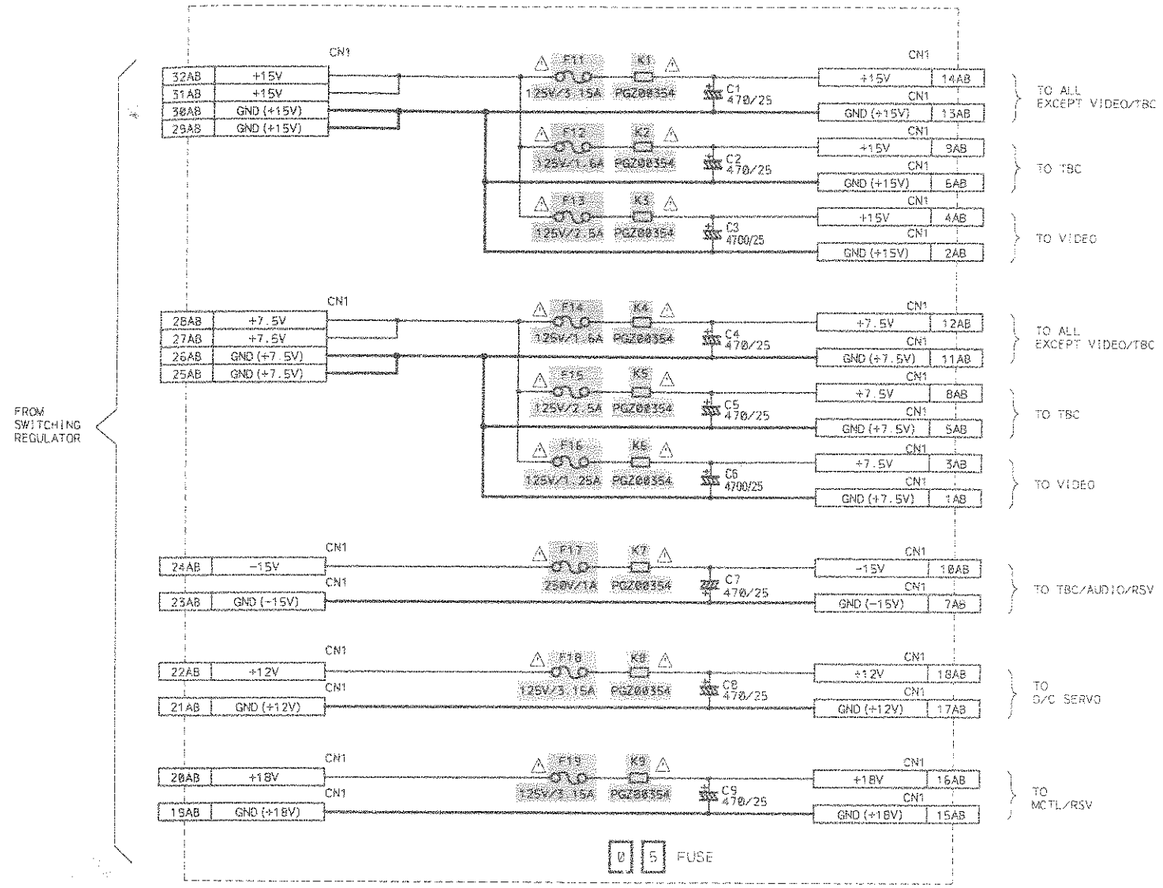



CN6 VIDEO
CN7 AV_CN_SCR
CN8 AUDIO3
CN9 AUDIO2
CN10 FUSE
CN11 SYS MOTHER
CN12 MOTHER 1
CN13 FM PWB
CN14 MOTHER 1
CN15 D/C SERVO
CN16 FM PWB
CN17 D/C SERVO
CN18 FM PWB
CN1 FM PWB
CN2 FM PWB
CN3 DOOR TERM
CN4 METER
CN5 AUDIO 1
CN6 JACK
CN7 MOTHER 1
CN8 AUDIO 5
CN9 AUDIO 1
CN10 AUDIO 5
CN11 REAR 1
CN12 SLOT MOTHER
CN13 CPE-CPU
CN14 SYS MOTHER
CN15 D/C SERVO
CN16 MOTOR 12V
CN17 MOTOR GND
CN18 REG +18V
CN19 REG +12V
CN20 REG -15V
CN21 SW REG
CN22 FAN
CN23 REAR 1
CN24 AUDIO 1
CN25 SYS MOTHER
CN26 MOTHER 1
CN27 SYS MOTHER
CN28 AUDIO 5
CN29 AUDIO 1
CN30 AUDIO 5
CN31 REAR 1
CN32 JACK
CN33 AUDIO 1
CN34 AUDIO 5
CN35 REAR 1
CN36 AUDIO 1
CN37 AUDIO 5
CN38 REAR 1
CN39 JACK
CN40 AUDIO 1
CN41 AUDIO 5
CN42 REAR 1
CN43 JACK
CN44 AUDIO 1
CN45 AUDIO 5
CN46 REAR 1
CN47 JACK

4.19 MOTHER BOARD-2 CIRCUIT BOARD (BR-S822/BR-S622)



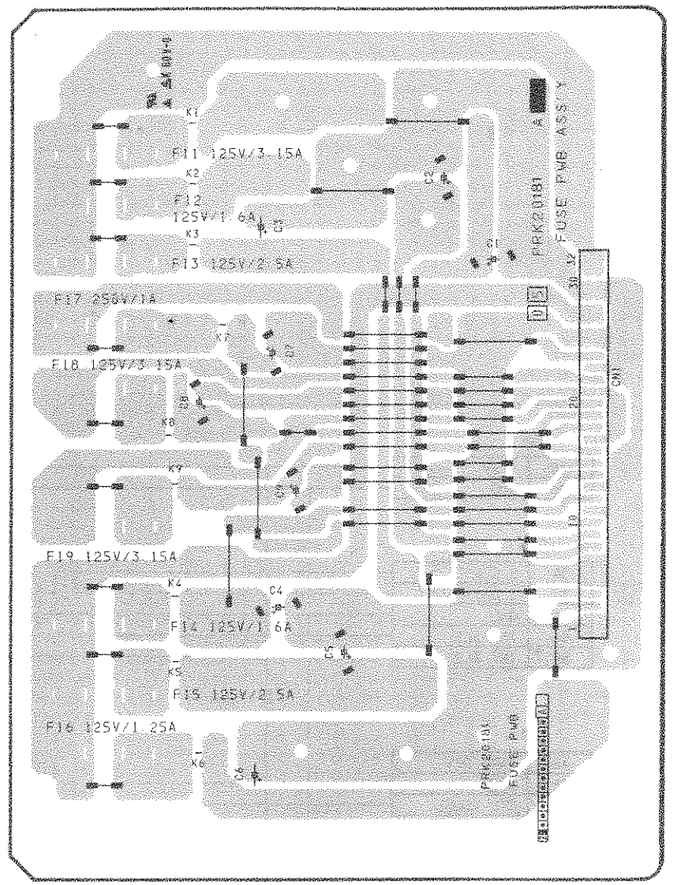
4.20 FUSE SCHEMATIC DIAGRAM



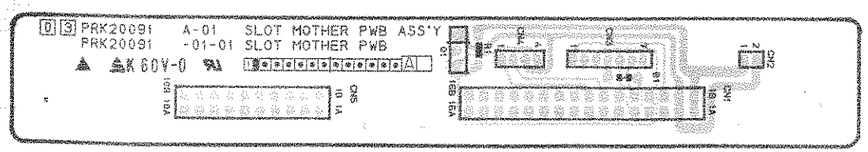
4.21 FUSE CIRCUIT BOARD

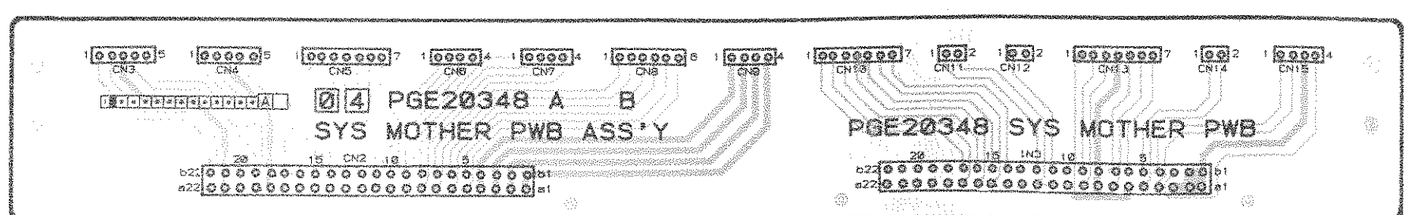
— DC voltage —

SYMBOL No.		REC	PB
CONNECTOR			
CN1	32AB	—	15.1
	31AB	—	15.1
	30AB	—	0.0
	29AB	—	0.0
	28AB	—	7.6
	27AB	—	7.6
	26AB	—	0.0
	25AB	—	0.0
	24AB	—	-15.3
	23AB	—	0.0
	22AB	—	12.0
	21AB	—	0.0
	20AB	—	18.0
	19AB	—	0.0
	14AB	—	15.0
	13AB	—	0.0
	9AB	—	15.0
	6AB	—	0.0
	4AB	—	14.9
	2AB	—	0.0
	12AB	—	7.4
	11AB	—	0.0
	8AB	—	7.5
	5AB	—	0.0
	3AB	—	7.4
	1AB	—	0.0
	10AB	—	-15.2
	7AB	—	0.0
	18AB	—	12.0
	17AB	—	0.0
	16AB	—	17.9
	15AB	—	0.0

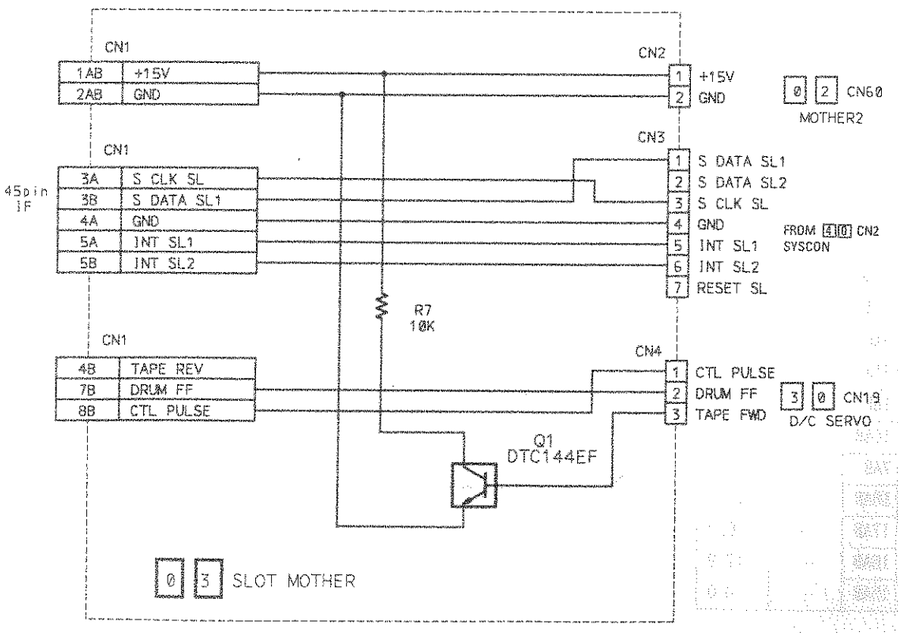


4.22 SYSCON MOTOR & SLOT MOTHER CIRCUIT BOARD

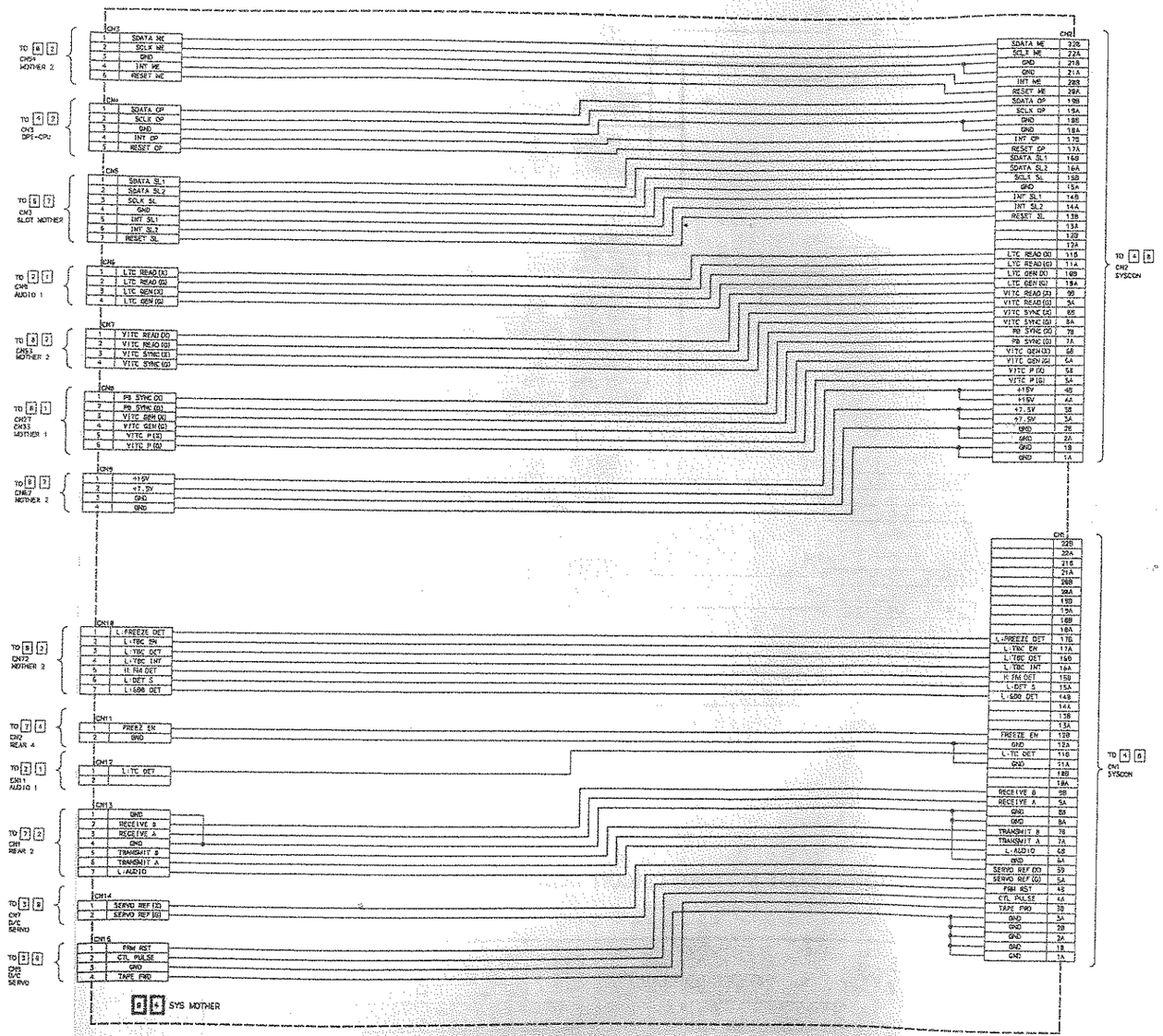




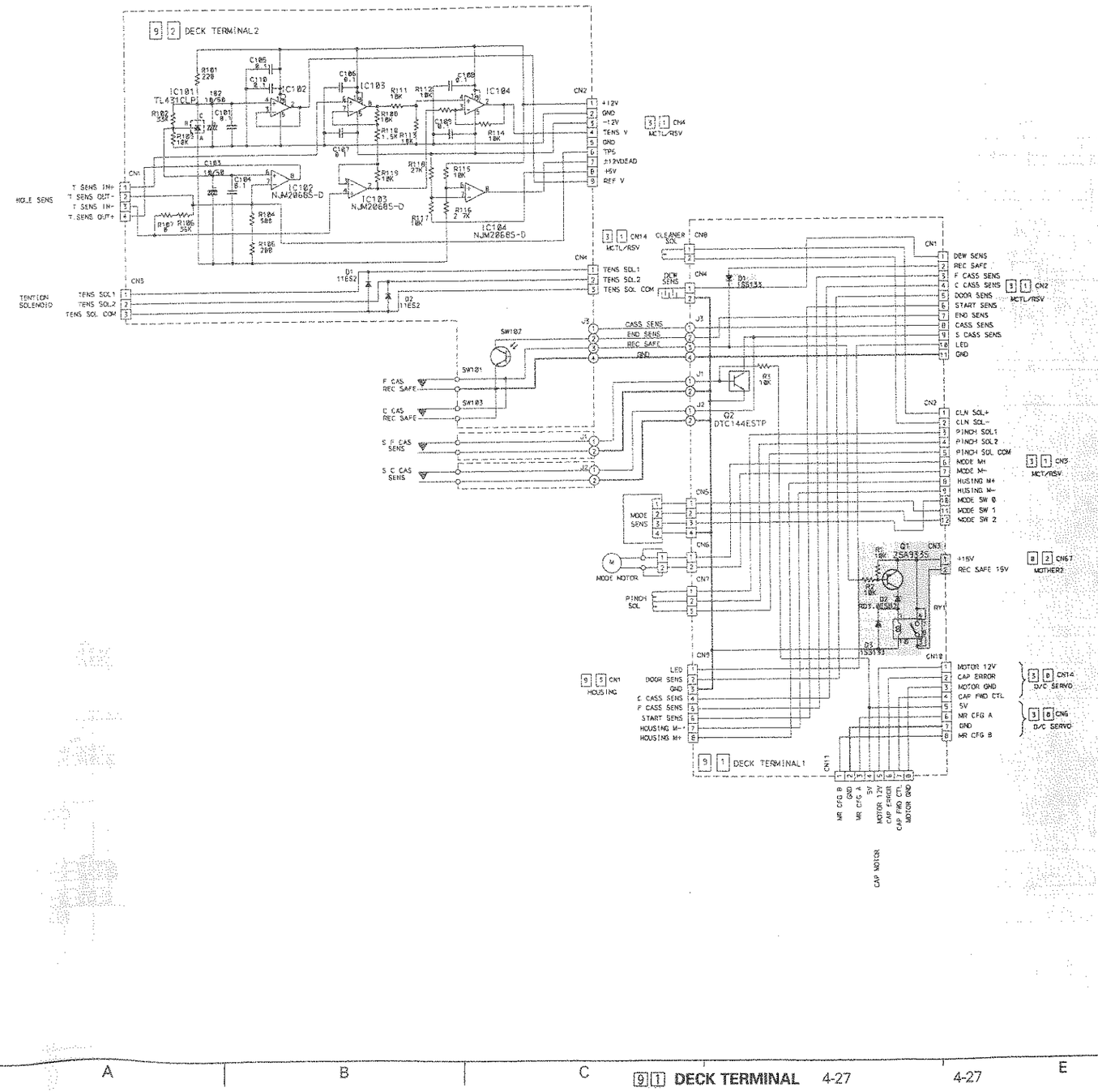
4.23 SLOT MOTHER SCHEMATIC DIAGRAM



4.24 SYSCON MOTHER SCHEMATIC DIAGRAM

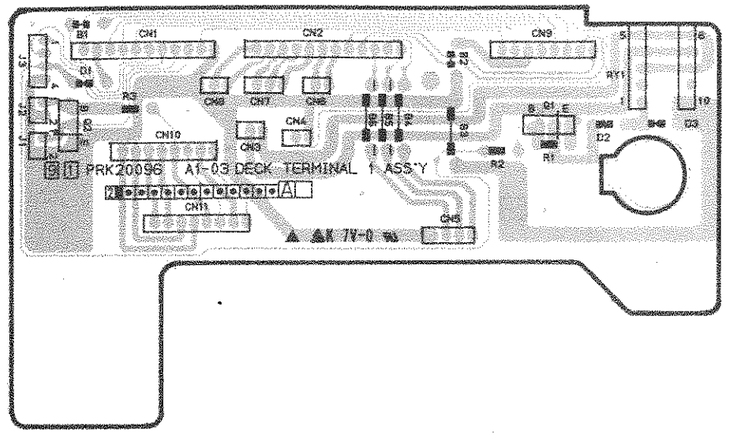

TO 0 2 CN54 MOTHER 2
TO 4 2 CN3 DFI-CPU
TO 0 7 CN3 SLOT MOTHER
TO 2 1 CN6 AUDIO 1
TO 0 2 CN3 MOTHER 2
TO 0 5 CN7 CN33 MOTHER 1
TO 0 3 CN67 MOTHER 2
TO 0 2 CN72 MOTHER 2
TO 7 4 CN2 REAR 4
TO 3 1 CN31 AUDIO 1
TO 7 2 CN1 REAR 2
TO 3 8 CN7 D/C SERVO
TO 3 6 CN3 D/C SERVO
0 4 SYS MOTHER
TO 4 8 CN2 SYSCON
TO 4 8 CN1 SYSCON

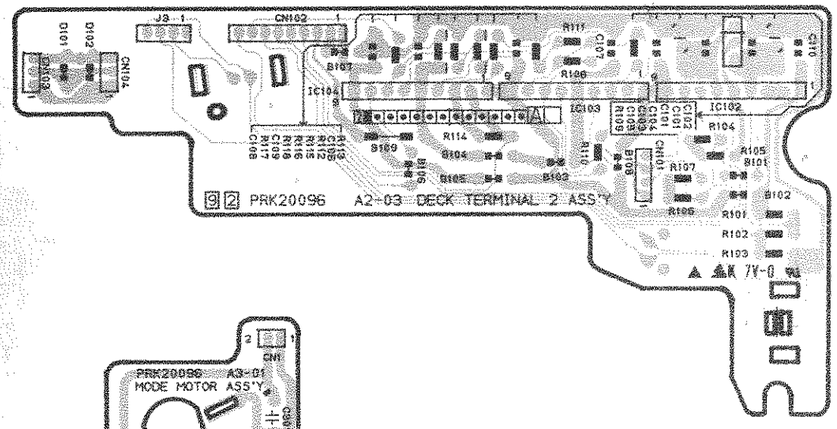
4.25 DECK TERMINAL SCHEMATIC DIAGRAM

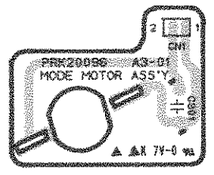


4.26 DECK TERMINAL & CASSETTE HOUSING CIRCUIT BOARDS

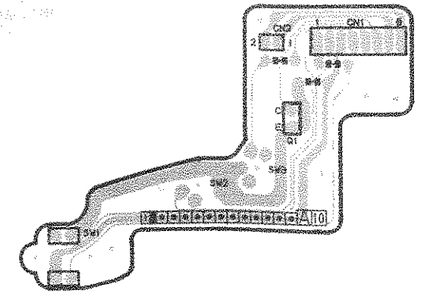
— DECK TERMINAL —







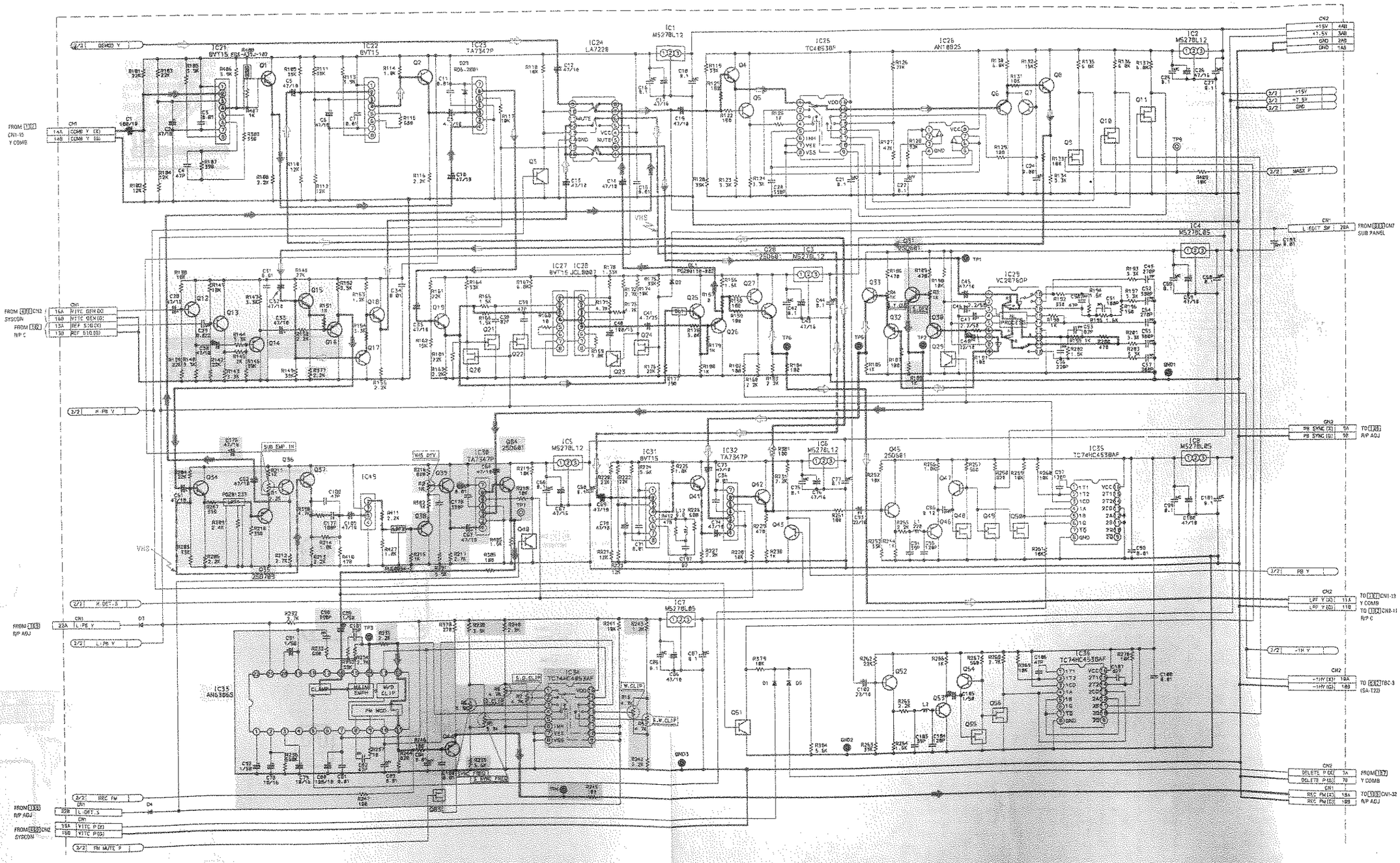
— CASSETTE HOUSING —

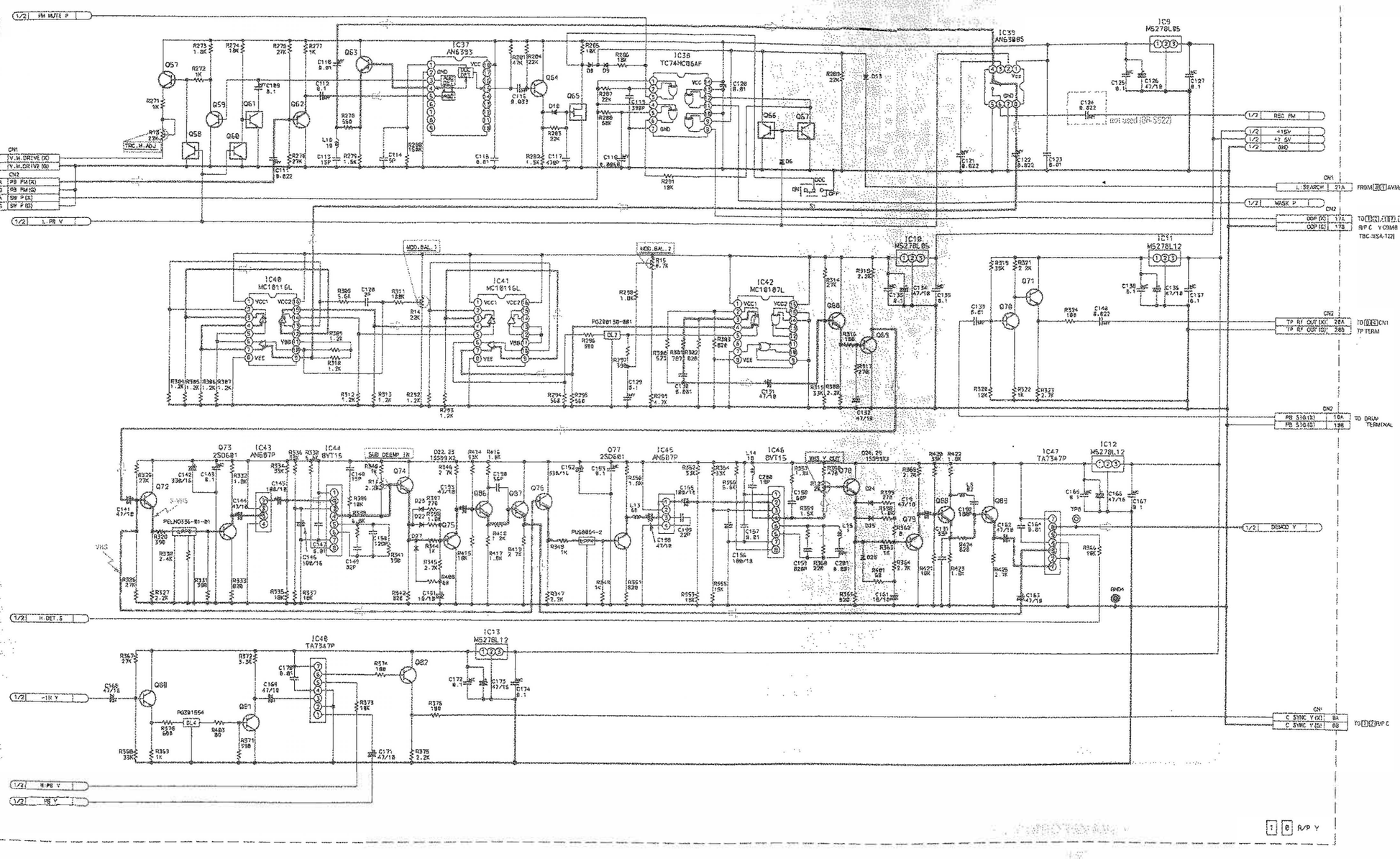


4-27

4.27 REC/PB Y SCHEMATIC DIAGRAM

— DIAGRAM (1/2) —




1/2 FM MUTE P
IC37 AN6393
IC38 TC74HC86AF
IC39 AN6388S
IC9 MS278L05
IC40 MC1811GL
IC41 MC1811GL
IC42 MC1810L
IC10 MS278L05
IC11 MS278L12
Q57 2SD601
Q58
Q59
Q60
Q61
Q62
Q63
Q64
Q65
Q66
Q67
Q68
Q69
Q70
Q71
TRC.M.ADJ
CN1
1A V.M.DRIVE (X)
1B V.M.DRIVE (G)
CN2
15A PB FM (X)
15D PB FM (G)
15A SW P (X)
15B SW P (G)
TO [1][E] CN2 METER SW
FROM [1][E] CN1-3P R/P ADJ
FROM [1][E] R/P C
1/2 L PB V
MOD. BAL. 1
MOD. BAL. 2
1/2 REC FM
1/2 +15V
1/2 +7.5V
1/2 GND
L SEARCH 21A FROM [2][K] AVM/ONSC
1/2 MASK P
CN2
OSP (X) 17A
OSP (G) 17B
TO [1][C][1][7], [1][B][2] R/P C Y ONLY TBC-35A-72P
TP RF OUT (X) 26A
TP RF OUT (G) 26B
TO [1][E] CN1 TP TERM
PB SIG (X) 10A
PB SIG (G) 10B
TO DRUM TERMINAL
Q73 2SD601
IC43 AN6897P
IC44 BVT15
SUB DEEMP IN
Q72
Q74
Q75
Q76
Q86
Q87
Q77 2SD601
IC45 AN6897P
IC46 BVT15
VHS Y DET
Q78
Q79
Q88
IC47 TA7347P
IC12 MS278L12
S-VHS
VHS
PELN0535-B1-01
PUS0856-2
PQ291654
1/2 DEMOD Y
GND4
1/2 H DET S
IC48 TA7347P
IC13 MS278L12
Q80
Q81
Q82
1/2 -1H Y
1/2 H PB Y
1/2 PB Y
CN1
C SYNC Y (X) 8A
C SYNC Y (G) 8B
TO [1][C] R/P C
1 0 R/P Y

— DC voltage(1/3) —

SYMBOL	No.	REC	PB
INTEGRATED CIRCUIT			
IC1	1	12.1	12.1
	2	0.0	0.0
	3	14.9	14.9
IC2	1	11.7	11.7
	2	0.0	0.0
	3	14.9	14.9
IC3	1	12.0	12.0
	2	0.0	0.0
	3	14.9	14.9
IC4	1	5.1	5.1
	2	0.0	0.0
	3	7.4	7.4
IC5	1	11.8	11.8
	2	0.0	0.0
	3	14.9	14.9
IC6	1	12.0	12.0
	2	0.0	0.0
	3	14.9	14.9
IC7	1	5.1	5.1
	2	0.0	0.0
	3	7.5	7.5
IC8	1	5.1	5.1
	2	0.0	0.0
	3	7.5	7.5
IC9	1	5.1	5.1
	2	0.0	0.0
	3	7.4	7.4
IC10	1	5.0	5.0
	2	0.0	0.0
	3	7.4	7.4
IC11	1	12.1	12.1
	2	0.0	0.0
	3	14.9	14.9
IC12	1	12.0	12.0
	2	0.0	0.0
	3	14.9	14.9
IC13	1	12.0	12.0
	2	0.0	0.0
	3	14.9	14.9
IC21	1	12.1	12.1
	2	4.1	4.1
	3	4.1	4.1
	4	7.3	7.3
	5	3.4	3.4
	6	3.4	3.4
	7	0.0	0.0
	8	1.4	1.4
IC22	1	12.1	12.1
	2	3.1	3.1
	3	3.1	3.1
	4	6.0	6.0
	5	2.4	2.4
	6	2.4	2.4
	7	0.0	0.0
	8	1.4	1.4
IC23	1	8.5	8.5
	2	0.0	0.0
	3	8.5	8.4
	4	0.0	0.0
	5	0.1	6.5
	6	7.7	7.6
	7	12.1	12.1
IC24	1	8.0	8.1
	2	7.3	7.3
	3	0.0	0.0
	4	12.1	12.1
	5	8.0	8.1
	6	7.3	7.3
	7	7.3	7.3
	8	8.0	8.1
	9	8.1	8.0
	10	0.1	7.8

SYMBOL	No.	REC	PB
IC24	11	0.0	0.0
	12	8.1	8.0
	13	0.1	7.8
	14	0.0	0.0
	15	0.1	7.8
	16	8.1	8.0
IC25	1	5.0	5.0
	2	4.7	4.7
	3	5.0	5.0
	4	5.0	5.0
	5	4.6	4.6
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	11.5	11.5
	10	11.7	11.7
	11	11.7	11.5
	12	4.7	4.7
	13	9.7	9.6
	14	9.7	9.6
	15	5.0	5.0
	16	11.7	11.7
IC26	1	4.7	4.7
	2	4.7	4.7
	3	4.6	4.6
	4	0.0	0.0
	5	4.7	4.7
	6	4.7	4.7
	7	4.7	0.0
	8	11.7	0.0
IC27	1	9.7	9.7
	2	4.2	4.2
	3	4.2	4.2
	4	8.3	8.3
	5	3.5	3.5
	6	3.5	3.5
	7	0.0	0.0
	8	1.1	1.1
IC28	1	9.7	9.7
	2	12.0	12.0
	3	8.9	9.0
	4	8.3	8.3
	5	8.2	8.2
	6	6.5	6.5
	7	0.0	0.0
	8	5.5	5.6
IC29	1	2.0	2.1
	2	2.0	2.1
	3	3.4	3.4
	4	3.4	3.5
	5	2.2	2.2
	6	2.0	2.1
	7	5.0	5.1
	8	2.5	2.5
	9	2.9	2.9
	10	2.9	2.9
	11	2.9	2.9
	12	2.9	2.9
	13	0.0	0.0
	14	2.9	2.9
	15	2.9	2.9
	16	2.6	2.1
	17	2.6	2.1
	18	2.0	2.1
IC30	1	8.2	8.2
	2	0.0	0.0
	3	8.2	8.2
	4	0.0	0.0
	5	0.0	0.0
	6	7.4	7.4
	7	11.7	11.8
IC31	1	12.0	12.0
	2	4.1	4.1
	3	4.1	4.1
	4	8.4	8.4
	5	3.4	3.4
	6	3.4	3.4
	7	0.0	0.0
	8	1.2	1.2
IC32	1	8.3	8.3
	2	0.0	0.0
	3	8.4	8.4

SYMBOL	No.	REC	PB
IC32	4	0.0	0.0
	5	0.0	0.0
	6	7.5	7.6
	7	12.0	12.0
IC33	1	3.3	3.3
	2	0.7	0.7
	3	3.4	0.0
	4	0.0	0.0
	5	0.5	0.5
	6	0.0	0.0
	7	5.4	5.4
	8	4.2	4.3
	9	4.2	4.3
	10	2.4	2.4
	11	3.0	3.4
	12	2.2	2.2
	13	2.4	2.4
	14	2.2	2.2
	15	2.2	2.1
	16	1.5	1.5
	17	2.5	2.5
	18	1.5	0.9
	19	0.0	0.0
	20	1.4	1.4
	21	3.7	0.8
	22	2.7	2.8
IC34	1	2.4	2.4
	2	2.0	2.0
	3	2.1	2.1
	4	2.1	2.1
	5	2.8	2.8
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	4.4	4.2
	10	4.4	4.2
	11	4.4	4.2
	12	3.4	3.4
	13	2.4	2.4
	14	2.4	2.4
	15	2.4	2.4
	16	5.1	5.1
IC35	1	0.0	0.0
	2	4.9	4.9
	3	5.0	5.1
	4	0.1	0.1
	5	4.6	4.6
	6	0.1	0.1
	7	4.9	4.9
	8	0.0	0.0
	9	5.1	5.1
	10	0.0	0.0
	11	0.0	0.0
	12	0.0	0.0
	13	0.0	0.1
	14	5.1	5.0
	15	0.0	0.0
	16	5.1	5.1
IC36	1	0.0	0.0
	2	5.0	0.0
	3	5.1	5.1
	4	4.5	4.5
	5	0.1	0.1
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	5.5	5.5
	12	0.7	0.7
	13	4.5	4.5
	14	0.0	0.0
	15	0.0	0.0
	16	5.1	5.1
IC37	1	2.8	2.9
	2	0.0	0.0
	3	4.3	3.9
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.1
	10	0.0	0.1
	11	0.0	0.1

SYMBOL	No.	REC	PB
IC37	12	0.1	0.1
	13	0.1	0.1
	14	3.2	3.2
	15	5.1	5.1
	16	2.2	2.2
	17	3.2	3.2
	18	5.1	5.1
IC38	1	0.0	0.0
	2	2.6	0.0
	3	0.0	0.0
	4	0.0	2.6
	5	2.6	0.1
	6	0.1	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	0.0	0.1
	12	0.0	0.1
	13	0.0	0.0
	14	5.1	5.1
IC39	1	5.1	5.1
	2	3.7	0.0
	3	2.6	2.7
	4	2.7	0.0
	5	0.0	2.7
	6	2.7	0.0
	7	0.0	0.0
	8	2.8	2.7
IC40	1	5.0	5.0
	2	3.8	3.8
	3	3.8	3.8
	4	3.8	3.8
	5	3.8	3.8
	6	3.8	3.8
	7	3.8	3.8
	8	3.8	3.8
	9	0.0	0.0
	10	3.7	3.7
	11	3.8	3.8
	12	3.8	3.8
	13	3.8	3.8
	14	3.8	3.8
	15	3.8	3.8
	16	5.0	5.0
IC41	1	5.0	5.0
	2	3.8	3.8
	3	3.8	3.8
	4	3.8	3.8
	5	3.8	3.8
	6	3.8	3.8
	7	3.8	3.8
	8	3.8	3.8
	9	0.0	0.0
	10	3.8	3.8
	11	3.8	3.8
	12	3.8	3.8
	13	3.8	3.8
	14	4.1	4.1
	15	4.1	4.1
	16	5.0	5.0
IC42	1	5.0	5.0
	2	3.6	3.6
	3	4.0	4.0
	4	3.8	3.8
	5	3.8	3.8
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	3.6	3.6
	12	4.5	4.5
	13	4.5	4.5
	14	3.6	3.6
	15	0.0	0.0
	16	5.0	5.0
IC43	1	6.5	6.5
	2	12.0	12.0
	3	2.7	2.8
	4	0.0	0.0
IC44	1	12.0	12.0
	2	4.2	4.2

— DC voltage(2/3) —

SYMBOL	No.	REC	PB
IC44	3	4.2	0.0
	4	6.8	6.8
	5	3.5	3.5
	6	3.5	3.5
	7	0.0	0.0
	8	1.2	1.2
IC45	1	6.6	6.6
	2	12.0	12.0
	3	2.7	2.7
	4	0.0	0.0
IC46	1	12.0	12.0
	2	4.1	4.1
	3	4.2	4.2
	4	6.9	6.9
	5	3.4	3.4
	6	3.4	3.4
	7	0.0	0.0
	8	1.2	1.2
IC47	1	8.4	8.4
	2	0.0	0.0
	3	8.4	8.4
	4	0.0	0.0
	5	0.0	0.0
	6	7.6	7.6
	7	12.0	12.0
IC48	1	8.4	8.4
	2	0.0	0.0
	3	8.4	8.4
	4	0.0	0.0
	5	0.1	6.5
	6	7.6	7.6
	7	12.0	12.0

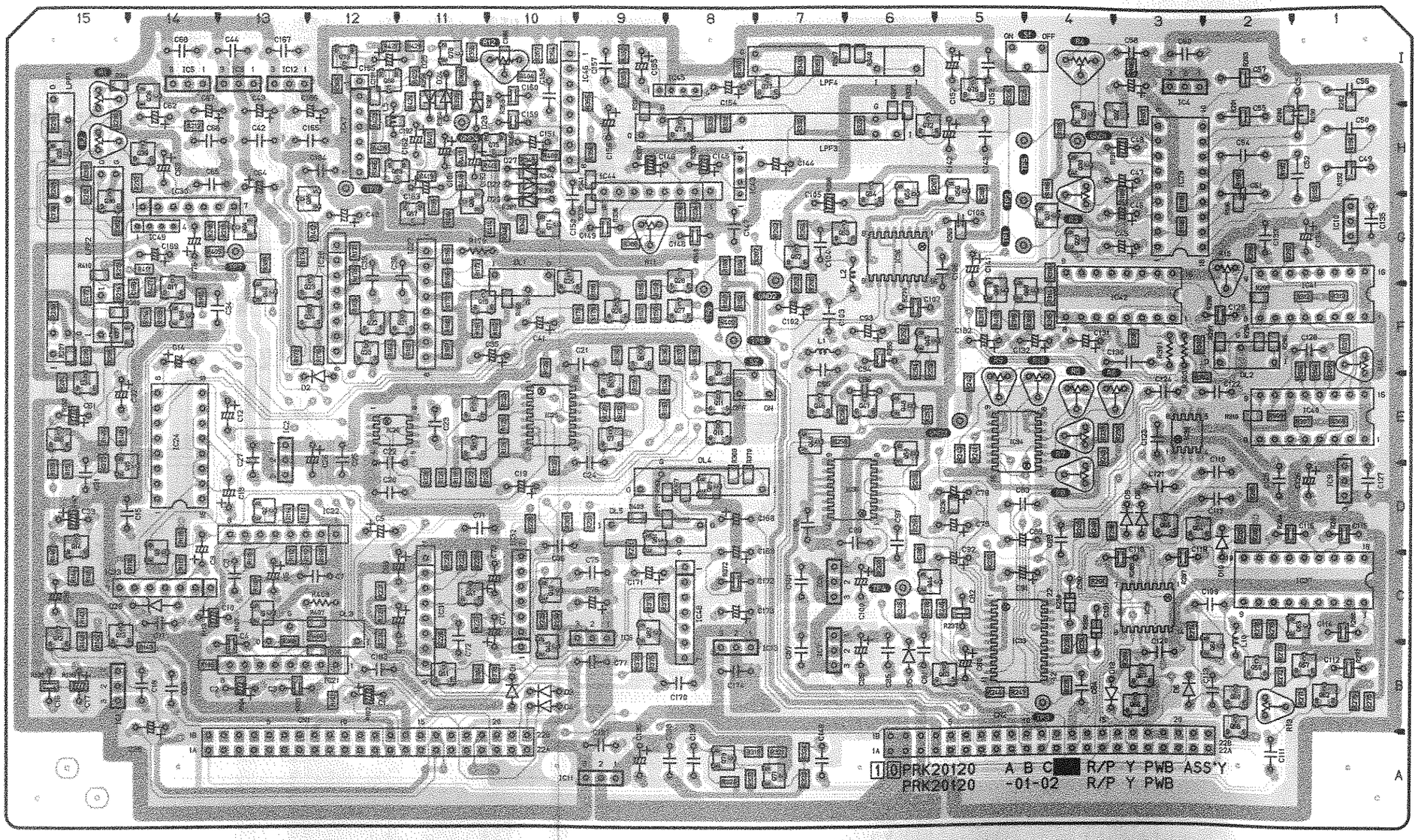
TRANSISTOR

SYMBOL	No.	REC	PB
Q1	B	7.3	7.3
	C	12.1	12.1
	E	6.6	6.6
Q2	B	6.0	6.0
	C	12.1	12.1
	E	5.4	5.4
Q3	B	3.7	0.8
	C	0.1	7.8
	E	0.0	0.0
Q4	B	5.6	5.6
	C	11.7	11.8
	E	5.0	5.0
Q5	B	5.6	5.6
	C	11.7	11.7
	E	5.0	5.0
Q6	B	5.0	5.0
	C	0.0	0.0
	E	5.6	5.6
Q7	B	9.7	0.0
	C	0.0	0.0
	E	5.6	5.6
Q8	B	5.6	5.6
	C	11.7	11.8
	E	5.0	5.0
Q9	D	11.7	11.5
	G	0.0	0.1
	S	0.0	0.0
Q10	D	11.7	11.7
	G	0.0	0.0
	S	0.0	0.0
Q11	D	11.5	11.5
	G	0.1	0.1
	S	0.0	0.0
Q12	B	6.5	6.5
	C	12.1	12.1
	E	5.9	6.0
Q13	B	6.5	6.5
	C	12.1	12.1
	E	5.9	5.9
Q14	B	5.6	5.6
	C	0.0	0.0
	E	6.3	6.3
Q15	B	6.5	6.5
	C	12.1	12.1
	E	5.9	5.9
Q16	B	5.9	5.9
	C	0.0	0.0
	E	6.5	6.6
Q17	B	6.5	6.5
	C	0.0	0.0
	E	7.2	7.2
Q18	B	10.7	10.8
	C	12.1	12.1
	E	10.1	10.1
Q19	B	4.9	4.9
	C	12.0	12.0
	E	4.2	4.2
Q20	D	0.0	4.5
	G	3.7	0.0
	S	0.0	0.0
Q21	D	0.4	0.0
	G	0.0	4.5
	S	0.0	0.0
Q22	D	0.0	0.9
	G	0.1	0.8
	S	0.0	0.0
Q23	B	9.9	0.1
	C	0.0	8.5
	E	0.0	0.0
Q24	D	9.9	0.1
	G	0.0	4.5
	S	0.0	0.0
Q25	B	4.2	0.0
	C	12.0	12.0
	E	3.6	3.6
Q26	B	0.0	3.6
	C	0.0	0.0
	E	4.3	4.3
Q27	B	4.3	4.3
	C	12.0	12.0
	E	3.7	3.7
Q28	B	4.3	4.3
	C	12.0	12.0
	E	3.6	0.0
Q29	B	3.7	0.8
	C	0.0	5.0
	E	0.0	0.0
Q30	B	0.0	2.2
	C	0.0	0.0
	E	0.1	2.9
Q31	B	3.2	3.1
	C	5.0	5.0
	E	2.5	0.0
Q32	B	1.5	1.5
	C	0.0	0.0
	E	2.1	2.1
Q33	B	2.4	2.4
	C	5.1	5.1
	E	1.7	1.7
Q34	B	6.3	6.3
	C	11.7	11.8
	E	5.7	5.7
Q35	B	2.6	2.6
	C	0.0	0.0
	E	3.2	3.2
Q36	B	3.8	3.8
	C	11.7	11.8
	E	3.2	3.2
Q37	B	6.3	6.3
	C	11.7	11.8
	E	5.7	5.7
Q38	B	2.3	2.3
	C	0.0	0.0
	E	3.0	3.0
Q39	B	7.2	7.2
	C	11.7	0.0
	E	6.6	6.6
Q40	B	4.2	4.2
	C	0.1	0.0
	E	0.0	0.0
Q41	B	8.4	8.4
	C	12.0	12.0
	E	7.8	7.8
Q42	B	7.5	7.6
	C	12.0	12.0
	E	6.9	6.9
Q43	B	4.7	4.7
	C	0.0	0.0
	E	5.4	5.4
Q44	B	3.0	3.4
	C	0.0	0.0
	E	3.6	4.0
Q45	B	3.8	3.8
	C	5.1	5.1
	E	3.1	3.1
Q46	B	3.1	3.1
	C	0.0	0.0
	E	3.7	3.7
Q47	B	0.9	0.8
	C	5.1	0.0
	E	3.2	3.2
Q48	D	0.9	0.8
	G	3.2	3.2
	S	0.0	0.0
Q49	D	4.6	4.7
	G	0.9	0.8
	S	0.0	0.0
Q50	D	4.6	4.6
	G	0.9	0.8
	S	0.1	0.0
Q51	B	0.1	7.8
	C	0.0	0.0
	E	0.0	0.0
Q52	B	2.9	2.9
	C	5.1	5.1
	E	2.3	0.0
Q53	B	2.3	2.3
	C	0.0	0.0
	E	3.0	3.0
Q54	B	0.7	0.1
	C	5.1	5.1
	E	3.6	3.7
Q55	D	0.7	0.6
	G	3.6	3.7
	S	0.0	0.0
Q56	D	4.7	4.7
	G	0.7	0.6
	S	0.0	0.0
Q57	B	0.0	1.4
	C	5.1	0.1
	E	1.1	1.0
Q58	B	3.7	0.8
	C	0.0	1.4
	E	0.0	0.0
Q59	B	0.1	0.8
	C	0.0	0.0
	E	0.5	1.4
Q60	B	3.7	0.8
	C	0.0	4.3
	E	0.0	0.0
Q61	B	0.0	4.3
	C	0.1	0.0
	E	0.0	0.0
Q62	B	2.7	2.7
	C	0.0	0.0
	E	3.4	3.4
Q63	B	4.0	4.0
	C	5.1	5.1
	E	3.3	3.3
Q64	B	4.8	4.8
	C	5.1	5.1
	E	4.2	4.2
Q65	D	0.0	0.0
	G	3.6	3.6
	S	0.0	0.0
Q66	B	3.2	0.4
	C	0.0	0.0
	E	0.0	0.0
Q67	B	3.2	0.4
	C	0.0	0.1
	E	0.0	0.0
Q68	B	0.0	2.7
	C	5.0	0.0
	E	0.1	2.1
Q69	B	2.1	2.1
	C	0.0	0.0
	E	2.7	2.7
Q70	B	3.2	3.2
	C	6.5	6.5
	E	2.6	2.6
Q71	B	6.5	6.5
	C	12.1	12.1
	E	5.9	5.9
Q72	B	5.2	5.2
	C	12.0	12.0
	E	4.6	0.0
Q73	B	2.1	2.1
	C	8.6	8.9
	E	1.5	1.5
Q74	B	7.8	7.8
	C	12.0	12.0
	E	7.2	7.2
Q75	B	7.2	7.2
	C	0.0	0.0
	E	7.8	7.8
Q76	B	5.2	5.2
	C	12.0	12.0
	E	4.6	4.6
Q77	B	2.3	2.3
	C	8.5	8.5
	E	1.6	1.7
Q78	B	8.2	8.2
	C	12.0	12.0
	E	7.5	7.6
Q79	B	7.5	7.6
	C	0.0	0.0
	E	8.2	8.2

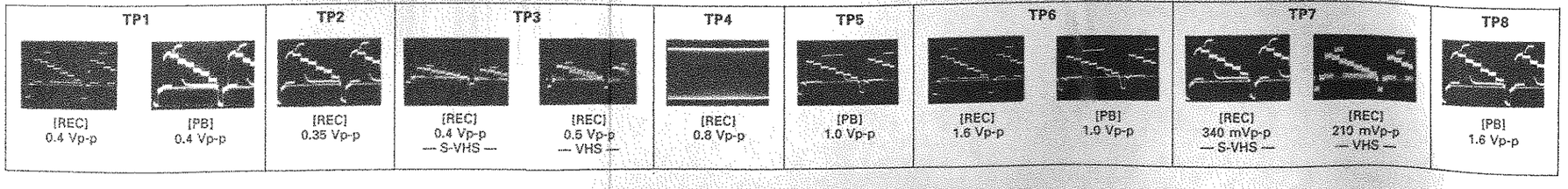
— DC voltage(3/3) —

SYMBOL No.		REC	PB
Q80	B	6.1	6.1
	C	12.0	12.0
	E	5.4	5.5
Q81	B	1.6	1.6
	C	0.0	0.0
	E	2.2	2.2
Q82	B	7.6	7.6
	C	12.0	12.0
	E	7.0	7.0
CONNECTOR			
CN1	14A	6.6	6.6
	14B	0.0	0.0
	16A	0.0	0.0
	16B	0.0	0.0
	13A	1.0	1.0
	13B	0.0	0.0
	22A	5.0	0.2
	22B	5.1	5.1
	15A	0.0	0.0
	15B	0.0	0.0
	20A	0.0	5.3
	18A	3.6	4.0
	18B	0.0	0.0
	1A	1.1	1.0
	1B	0.0	0.0
	19A	0.1	0.0
	19B	0.0	0.0
	8A	7.0	7.0
	8B	0.0	0.0
CN2	13A	0.0	0.0
	13B	0.0	0.0
	4AB	0.0	14.9
	3AB	7.4	7.5
	2AB	0.6	0.0
	1AB	0.0	0.0
	9A	4.6	4.7
	9B	0.0	0.0
	11A	3.6	3.6
	11B	0.0	0.0
	10A	3.7	3.7
	10B	0.0	0.0
	7A	0.0	0.0
	7B	0.0	0.0
	15A	0.0	0.0
	15B	0.0	0.0
	21A	0.1	0.1
	17A	0.0	0.0
	17B	0.0	0.0
	20A	0.1	0.0
	20B	0.0	0.0

4.28 REC/PB Y CIRCUIT BOARD

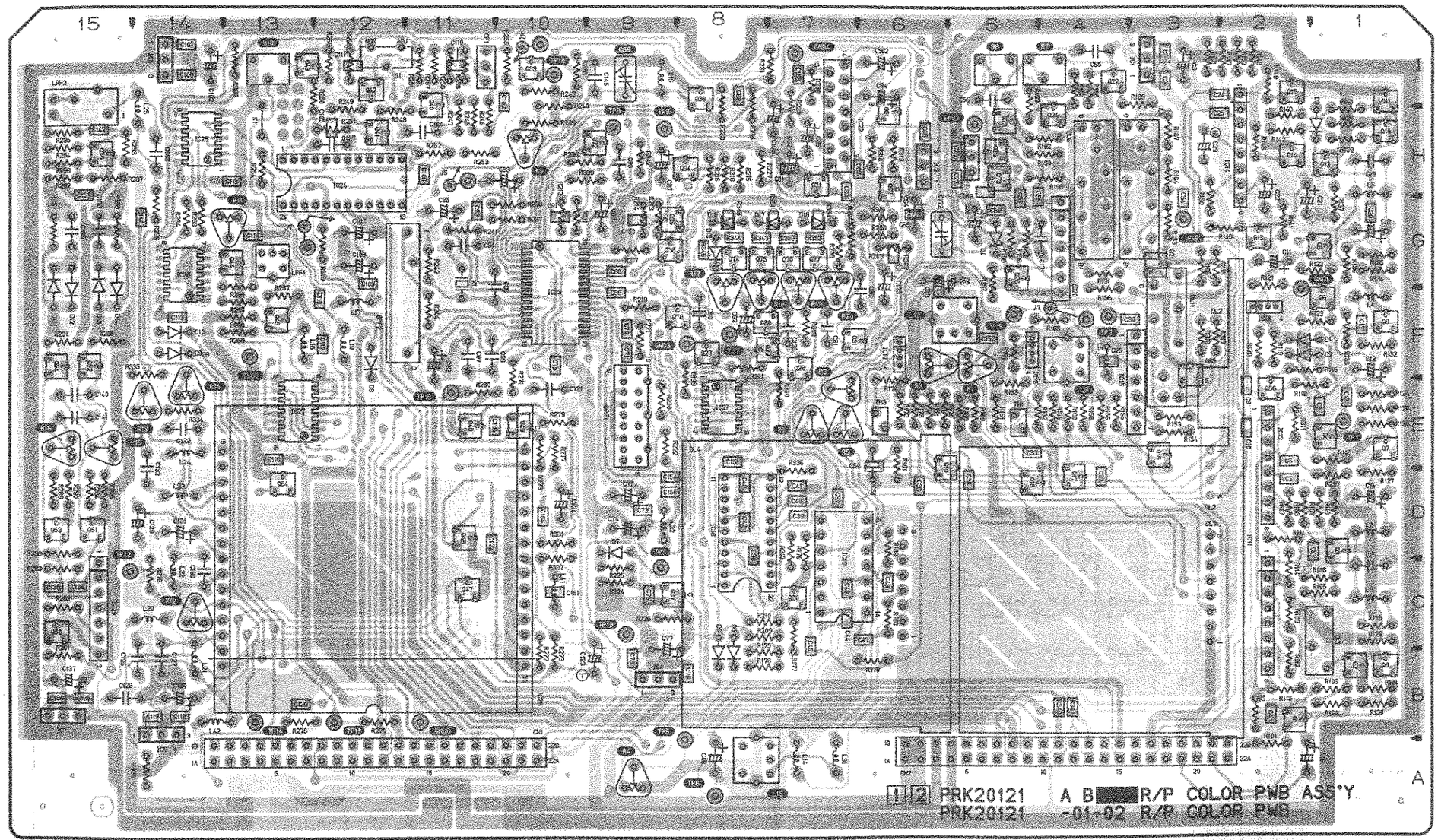


— MAIN WAVEFORMS OF R/P Y CIRCUIT —

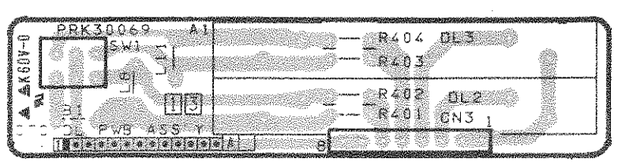


4.29 REC/PB COLOR CIRCUIT BOARD

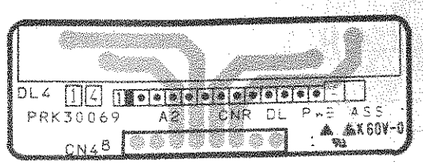
— REC/PB color —



— CTC DL BOARD —



— CNR DL BOARD —



4-31 1 2 REC/PB COLOR

— DC voltage(1/2) —

SYMBOL	No.	REC	PB
INTEGRATED CIRCUIT			
IC1	1	12.1	12.1
	2	0.0	0.0
	3	14.9	14.9
IC2	1	11.9	11.9
	2	0.0	0.0
	3	14.9	14.9
IC3	1	5.1	5.1
	2	0.0	0.0
	3	7.5	7.5
IC4	1	5.1	5.1
	2	0.0	0.0
	3	7.5	7.5
IC5	1	5.1	5.1
	2	0.0	0.0
	3	7.5	7.5
IC6	1	8.8	8.8
	2	0.0	6.0
	3	14.9	14.9
IC7	1	12.1	12.1
	2	0.0	0.0
	3	14.9	14.9
IC11	1	9.8	9.8
	2	12.1	12.1
	3	9.0	9.0
	4	8.3	8.3
	5	8.2	8.3
	6	6.6	6.6
	7	0.0	0.0
	8	5.6	5.6
IC12	1	9.8	9.8
	2	5.7	5.7
	3	5.6	5.5
	4	8.3	8.3
	5	4.9	4.9
	6	5.1	5.0
	7	0.0	0.0
	8	1.1	1.1
IC13	1	6.4	6.4
	2	12.1	12.1
	3	2.8	2.8
	4	0.0	0.0
IC14	1	8.3	8.3
	2	4.5	4.5
	3	4.5	4.5
	4	8.3	8.3
	5	8.3	8.3
	6	8.3	8.3
	7	0.0	0.0
	8	1.6	1.6
IC15	1	8.3	8.3
	2	8.3	8.3
	3	8.3	8.3
	4	0.0	0.0
	5	0.0	0.0
	6	7.5	7.5
	7	11.9	11.9
IC16	1	6.5	6.5
	2	11.8	11.9
	3	2.7	2.7
	4	0.0	0.0
IC17	1	6.5	6.5
	2	11.8	11.9
	3	2.7	2.7
	4	0.0	0.0
IC18	1	5.1	5.1
	2	5.1	5.1
	3	3.3	3.3
	4	3.3	3.3
	5	3.3	3.3
	6	3.3	3.3
	7	0.0	0.0
	8	2.5	2.4
	9	4.6	4.6
	10	3.1	3.1

SYMBOL	No.	REC	PB
IC18	11	2.3	2.3
	12	3.3	3.3
	13	3.3	3.3
	14	2.6	2.6
	15	2.6	2.6
	16	3.3	3.3
	17	2.8	2.8
	18	2.1	2.1
	19	3.3	3.3
	20	2.6	2.6
	21	2.6	2.6
	22	3.3	3.3
IC19	1	3.3	3.3
	2	2.7	2.7
	3	3.6	3.6
	4	5.1	5.1
	5	3.3	3.3
	6	3.9	3.9
	7	3.2	3.1
	8	2.0	2.0
	9	2.0	2.0
	10	2.3	2.3
	11	3.0	3.0
	12	2.0	2.0
	13	2.2	2.2
	14	2.2	2.2
IC20	1	8.3	8.3
	2	0.0	8.3
	3	8.0	8.0
	4	4.0	4.1
	5	7.5	7.8
	6	11.8	11.8
	7		
IC21	1	0.0	5.0
	2	0.0	0.0
	3	5.1	5.6
	4	1.6	2.2
	5	5.5	6.0
	6	2.0	2.6
	7	5.0	5.0
	8	2.0	2.0
	9	0.0	0.0
	10	5.5	5.5
	11	0.0	0.0
	12	3.6	0.7
	13	3.1	5.9
	14		
IC22	1	4.0	4.1
	2	3.5	3.0
	3	1.9	5.1
	4	1.2	1.7
	5	2.3	2.2
	6	3.0	3.0
	7	0.0	0.0
	8	3.6	3.6
	9	3.6	3.6
	10	3.6	3.6
	11	0.0	0.0
	12	3.6	3.6
	13	3.6	3.6
	14	2.5	2.5
IC23	1	0.4	0.4
	2	3.5	3.8
	3	2.4	1.3
	4	2.4	3.7
	5	2.5	2.5
	6	3.3	1.2
	7	0.0	0.0
	8	2.6	2.6
	9	4.6	4.6
	10	3.5	3.5
	11	0.2	0.2
	12	4.4	4.4
	13	2.6	2.6
	14	4.5	4.5
	15	5.5	5.5
	16	5.5	5.4
	17	0.7	0.7
	18	1.7	2.7
	19		
	20		
	21		
	22		
	23		
	24		

SYMBOL	No.	REC	PB
IC23	25	3.4	3.5
	26	2.4	2.5
	27	2.5	2.5
	28	2.7	2.7
	29	2.5	2.6
	30	2.6	2.6
IC24	1	3.6	3.6
	2	0.0	0.0
	3	0.0	0.0
	4	0.1	2.5
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.1	0.1
	9	5.5	5.5
	10	0.0	0.0
	11	0.5	0.5
	12	0.0	0.0
	13	5.5	0.4
	14	0.4	0.4
	15	5.5	0.4
	16	0.5	0.4
	17	5.5	5.4
	18	3.5	3.7
	19	3.5	3.5
	20	2.4	2.4
	21	2.4	2.4
	22	3.5	3.6
	23	3.6	3.6
	24	0.0	0.0
IC25	1	-0.1	0.0
	2	5.0	5.0
	3	0.0	0.0
	4	0.1	0.1
	5	5.5	5.5
	6	0.0	0.0
	7	0.0	0.0
	8	2.7	2.7
	9	4.2	4.2
	10	4.2	4.2
	11	0.0	0.0
	12	5.1	5.1
IC26	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	2.5	2.5
	10	2.5	2.5
	11	2.5	2.5
	12	2.5	2.5
	13	2.5	2.5
	14	5.1	5.1
IC27	1	1.6	1.6
	2	1.6	1.0
	3	1.6	1.6
	4	1.6	1.6
	5	1.6	1.6
	6	1.6	1.6
	7	0.0	0.0
	8	0.6	0.6
	9	0.0	0.0
	10	0.0	0.0
	11	1.6	1.6
	12	1.6	1.6
	13	1.6	1.6
	14	1.6	1.6
	15	1.6	1.6
	16	5.1	5.1
IC28	1	8.8	8.8
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.2
	5	0.6	0.5
	6	6.6	6.6
	7	6.6	6.6
	8	0.0	0.0
	9	2.6	2.6
	10	6.0	6.0
	11		

SYMBOL	No.	REC	PB
IC28	12	2.1	2.1
	13	6.7	6.7
	14	6.6	6.6
	15	0.0	0.0
	16	2.2	2.2
	17	2.5	2.5
	18	6.6	6.6
	19	3.3	3.3
	20	3.3	3.3
	21	3.8	3.8
	22	3.8	3.8
	23	3.8	3.8
	24	5.8	5.8
	25	6.3	7.3
	26	3.4	3.8
	27	3.8	3.8
	28	0.0	0.0
	29	0.0	0.0
	30	8.8	8.8
IC29	1	8.4	8.4
	2	0.0	0.0
	3	8.5	8.5
	4	0.0	0.0
	5	0.0	0.0
	6	7.7	7.7
	7	12.1	12.1

TRANSISTOR

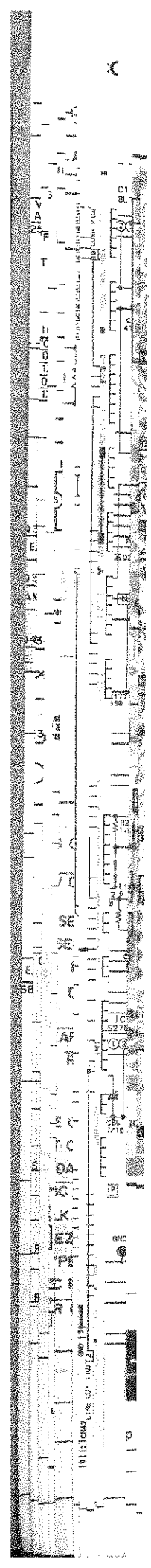
		REC	PB
Q1	B	6.1	6.1
	C	12.1	12.1
	E	5.4	5.5
Q2	B	5.4	5.4
	C	0.0	0.0
	E	6.1	6.1
Q3	B	6.0	6.0
	C	12.1	12.1
	E	5.4	5.4
Q4	B	5.0	5.0
	C	0.0	0.0
	E	5.7	5.6
Q5	B	6.5	6.5
	C	12.1	12.1
	E	5.9	5.9
Q6	B	2.8	2.8
	C	5.2	5.2
	E	2.2	2.4
Q7	B	3.5	3.5
	C	12.2	12.2
	E	2.8	2.8
Q8	B	2.8	2.8
	C	0.0	0.0
	E	3.5	3.5
Q9	B	6.5	6.6
	C	12.1	12.1
	E	5.9	5.9
Q10	B	7.7	7.7
	C	12.1	12.1
	E	7.3	7.3
Q11	B	7.7	7.7
	C	12.1	12.1
	E	7.3	7.3
Q12	B	7.9	7.9
	C	12.1	12.1
	E	7.3	7.3
Q13	B	1.6	1.6
	C	7.9	7.9
	E	1.0	1.0
Q14	B	8.3	8.3
	C	12.1	12.1
	E	7.7	7.7
Q15	B	8.3	8.3
	C	12.1	12.1
	E	7.7	7.7

— DC voltage(2/2) —

SYMBOL	No.	REC	PB
Q16	B	7.5	7.5
	C	11.8	11.8
	E	6.8	6.8
Q17	B	2.7	2.7
	C	10.1	10.1
	E	2.1	2.1
Q18	B	6.5	6.5
	C	11.8	11.8
	E	5.8	5.8
Q19	B	2.7	2.7
	C	10.1	10.1
	E	2.1	2.1
Q20	B	2.3	2.3
	C	5.1	5.1
	E	1.7	1.7
Q21	B	6.4	6.4
	C	11.8	11.8
	E	5.8	5.8
Q22	B	1.1	1.1
	C	11.3	11.3
	E	0.6	0.6
Q23	B	0.6	0.6
	C	0.0	0.0
	E	1.2	1.2
Q24	B	1.1	1.1
	C	11.3	11.3
	E	0.6	0.6
Q25	B	0.6	0.6
	C	0.0	0.0
	E	1.2	1.2
Q26	B	10.7	10.7
	C	11.8	11.8
	E	11.8	11.8
Q27	B	5.1	4.7
	C	0.3	5.0
	E	5.1	5.1
Q28	B	5.1	4.7
	C	0.1	5.0
	E	5.1	5.1
Q29	B	3.6	0.7
	C	5.1	5.1
	E	3.0	0.4
Q30	B	1.5	0.4
	C	0.9	0.2
	E	0.9	5.8
Q31	B	0.2	0.2
	C	0.0	0.0
	E	0.9	0.9
Q32	B	4.2	4.2
	C	0.3	0.3
	E	5.1	5.1
Q33	B	4.2	4.2
	C	0.1	0.0
	E	0.0	0.0
Q34	B	0.2	0.7
	C	0.0	0.0
	E	0.0	0.0
Q35	B	4.3	4.3
	C	1.5	1.5
	E	5.0	4.9
Q36	B	1.8	1.8
	C	4.3	4.3
	E	1.1	1.1
Q37	B	0.7	0.7
	C	0.0	0.0
	E	0.0	0.0
Q38	B	5.1	5.1
	C	5.1	5.1
	E	4.4	4.4
Q39	B	2.5	2.5
	C	0.0	5.1
	E	0.1	1.9
Q40	B	1.4	1.4
	C	4.3	4.3
	E	0.9	0.9
Q41	B	0.9	0.9
	C	0.0	0.0
	E	1.5	1.5
Q42	B	1.4	1.4
	C	3.4	3.4
	E	0.8	0.8
Q43	B	3.4	3.4
	C	5.1	5.1
	E	2.8	2.8
Q44	B	2.5	2.5
	C	5.1	5.1
	E	1.9	2.0
Q45	B	1.0	1.0
	C	0.0	0.0
	E	1.6	1.6
Q46	B	0.2	0.2
	C	0.0	0.0
	E	-0.1	0.0
Q47	B	3.6	0.7
	C	0.0	7.8
	E	0.0	0.0
Q48	B	0.0	0.0
	C	0.1	0.2
	E	0.0	0.0
Q49	B	5.2	5.2
	C	8.8	8.8
	E	4.6	4.6
Q50	B	7.7	7.7
	C	12.1	12.1
	E	7.0	7.1
Q51	B	2.3	2.3
	C	0.0	0.0
	E	2.9	3.0
Q52	B	2.9	3.0
	C	9.8	9.8
	E	2.3	2.3
Q53	B	1.0	1.0
	C	0.0	0.0
	E	1.7	1.7
Q54	B	1.6	1.6
	C	11.1	11.1
	E	1.0	1.0
Q55	B	6.4	6.5
	C	12.1	12.1
	E	5.8	5.8
Q56	B	2.8	2.8
	C	5.1	5.1
	E	2.2	2.2
Q61	B	2.5	2.2
	C	4.0	4.2
	E	1.9	1.6
Q62	B	4.0	4.2
	C	5.1	5.1
	E	3.4	3.6
Q63	B	2.9	2.9
	C	11.8	11.9
	E	2.2	2.3
Q64	B	1.6	1.6
	C	5.1	5.1
	E	1.0	1.0
Q71	D	0.4	0.4
	G	4.1	4.0
	S	0.0	0.0

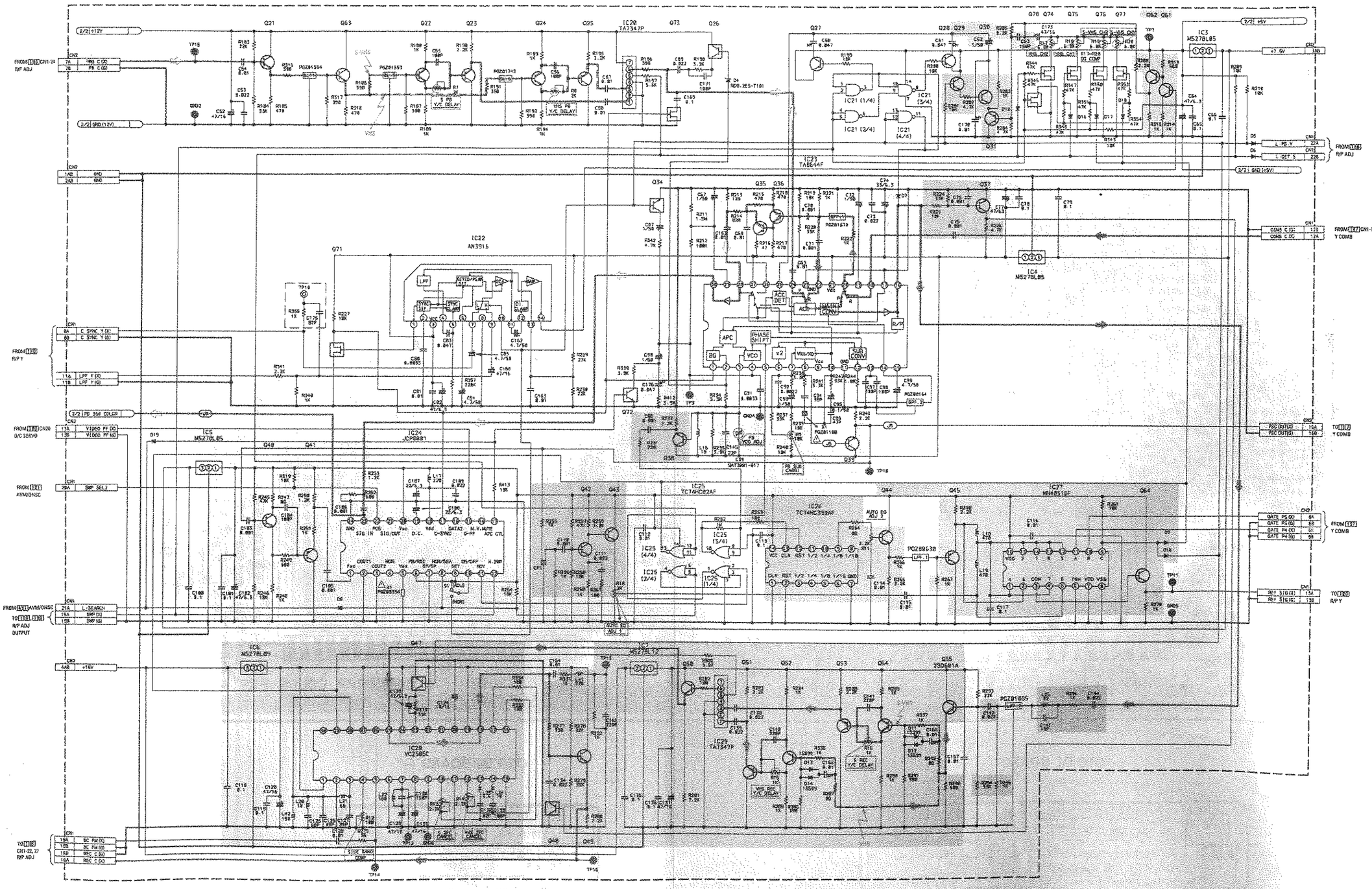
CONNECTOR

		REC	PB
CN1	8A	7.0	6.9
	8B	0.0	0.0
	20A	4.5	4.5
	21A	5.4	5.5
	18A	5.3	5.2
	18B	0.0	0.0
	16B	0.0	0.0
	16A	4.6	4.6
	22A	5.0	0.2
	22B	5.1	5.1
	12B	0.0	0.0
	12A	6.6	6.6
	13A	1.0	1.0
	13B	0.0	0.0
CN2	21A	5.4	5.5
	21B	0.0	0.0
	4A	14.9	14.9
	4B	14.9	14.9
	17A	0.0	0.0
	17B	0.0	0.0
	7A	0.0	5.2
	7B	0.0	0.0
	1A	0.0	0.0
	1B	0.0	0.0
	2A	0.0	0.0
	2B	0.0	0.0
	13A	0.0	2.6
	13B	0.0	0.0
	15A	2.6	0.0
	15B	0.0	0.0
	19A	7.0	7.0
	19B	0.0	0.0
	3A	7.4	7.5
	3B	7.4	7.5
	8A	0.0	0.0
	8B	0.0	0.0
	9A	0.0	0.0
	9B	0.0	0.0



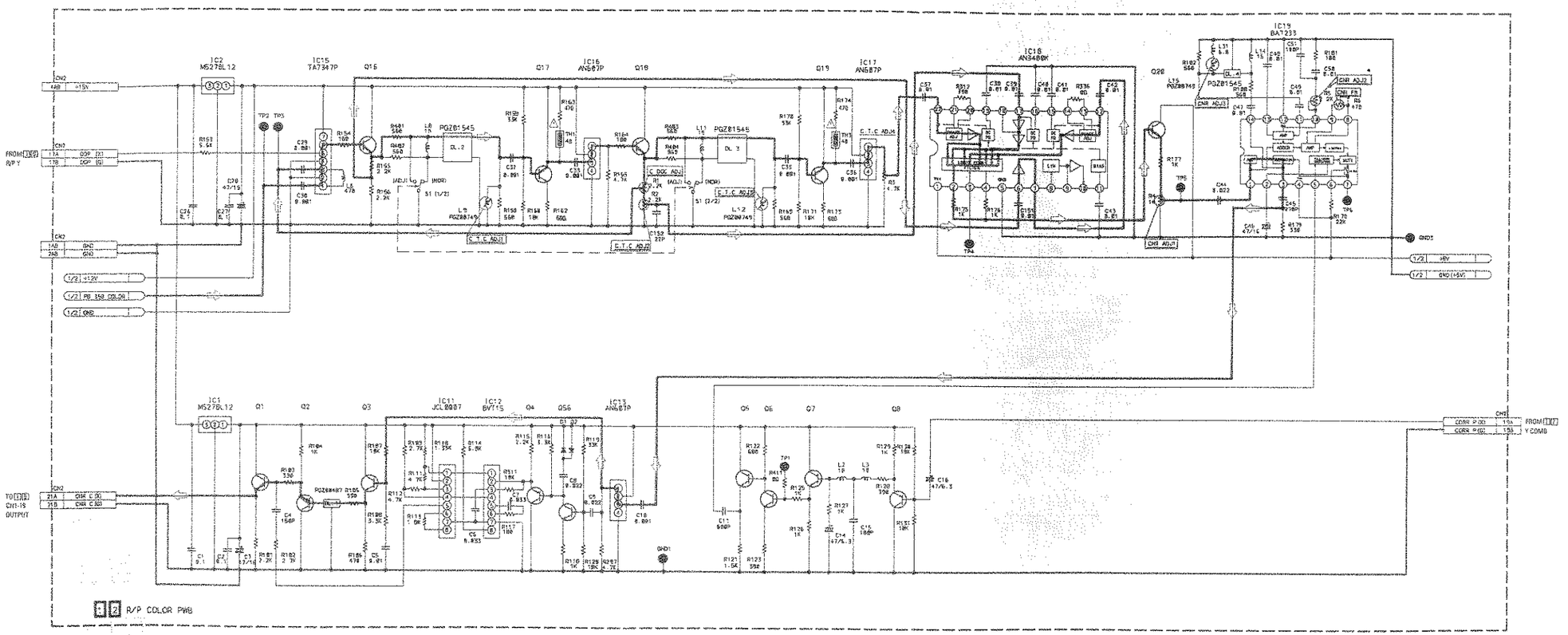
4.30 REC/PB COLOR SCHEMATIC DIAGRAM

— DIAGRAM (1/2) —



4-32 1 2 REC/PB COLOR SCHEMATIC

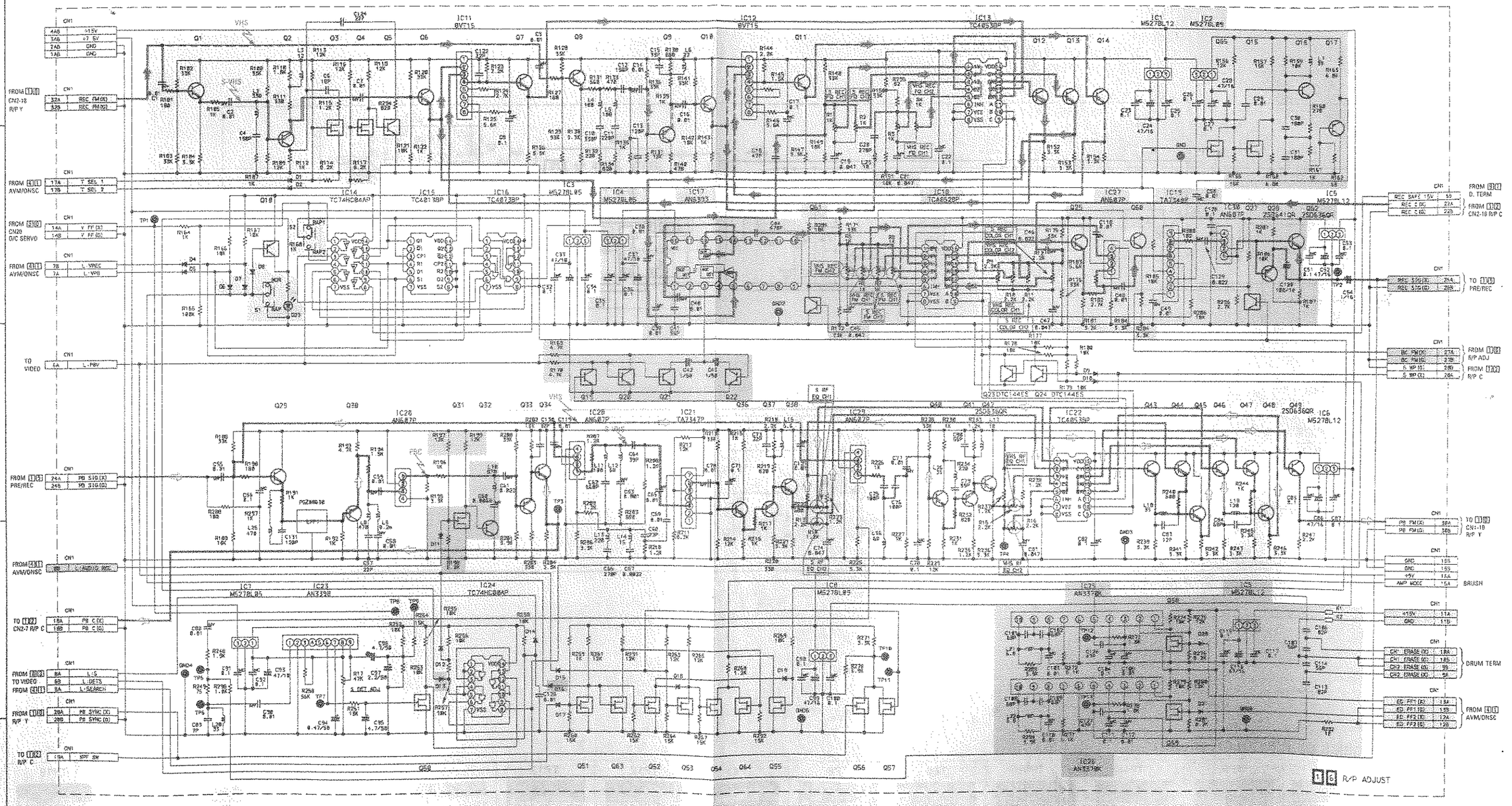
— DIAGRAM (2/2) —



— MAIN WAVEFORMS OF R/P COLOR CIRCUIT —

TP1	TP2	TP3	TP4	TP5	TP6	TP8	TP11	TP12	TP13	TP14		TP15		TP16
UPPER: VIDEO OUT LOWER: TP1	[PB] Burst level 137 mVp-p	[PB] Burst level 137 mVp-p	[PB] Burst level 40 mVp-p	[PB] Burst level 137 mVp-p	UPPER: C OUT LOWER: TP6	[PB] 480 mVp-p	UPPER: VIDEO OUT LOWER: TP11	[REC] Burst level 270 mVp-p	[REC] Burst level 143 mVp-p	[REC] 360 mVp-p — S-VHS —	[REC] 380 mVp-p — VHS —	[PB] Brust level 1.3 Vp-p — S-VHS —	[PB] Burst level 1.7 Vp-p — VHS —	[REC] Burst lvel 300 mVp-p

4.31 REC/PB ADJUST SCHEMATIC DIAGRAM



— DC voltage(1/2) —

SYMBOL No.		REC	PB
INTEGRATED CIRCUIT			
IC1	1	12.1	12.1
	2	0.0	0.0
	3	15.0	15.0
IC2	1	9.0	9.0
	2	0.0	0.0
	3	15.0	15.0
IC3	1	5.1	5.1
	2	0.0	0.0
	3	7.4	7.4
IC4	1	5.1	5.1
	2	0.0	0.0
	3	7.4	7.4
IC5	1	12.2	12.2
	2	0.0	0.0
	3	15.0	15.0
IC6	1	12.2	12.2
	2	0.0	0.0
	3	15.0	15.0
IC7	1	5.1	5.1
	2	0.0	0.0
	3	7.4	7.4
IC8	1	9.0	9.0
	2	0.0	0.0
	3	15.0	15.0
IC9	1	12.0	12.0
	2	0.0	0.0
	3	15.1	15.1
IC11	1	11.8	12.1
	2	3.3	3.6
	3	3.5	3.6
	4	9.9	10.2
	5	2.8	2.9
	6	2.6	2.9
	7	0.0	0.0
	8	1.2	1.2
IC12	1	11.8	12.1
	2	3.3	3.6
	3	3.5	3.6
	4	7.6	8.0
	5	2.6	2.9
	6	0.0	0.0
	7	0.0	0.0
	8	1.2	1.2
IC13	1	4.1	4.3
	2	4.1	4.3
	3	4.1	4.3
	4	4.1	4.3
	5	4.1	4.3
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	6.0	6.1
	10	6.0	6.1
	11	12.1	12.1
	12	7.0	7.3
	13	9.2	9.6
	14	9.2	7.3
	15	4.1	4.3
	16	11.8	12.1
IC14	1	2.5	-0.3
	2	2.6	2.6
	3	5.5	5.1
	4	0.0	0.2
	5	0.0	0.0
	6	5.1	5.1
	7	0.0	0.0
	8	0.0	0.0
	9	5.1	5.1
	10	5.1	5.1
	11	5.5	5.1
	12	5.5	5.1
	13	5.1	0.0
	14	5.1	5.1

SYMBOL No.		REC	PB
IC15	1	0.0	5.1
	2	5.1	0.0
	3	5.5	0.2
	4	5.5	1.0
	5	5.1	5.0
	6	1.2	5.1
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	0.0	0.0
	12	0.0	0.0
	13	5.1	5.1
	14	5.1	5.1
IC16	1	2.5	2.6
	2	0.0	5.1
	3	0.0	5.1
	4	0.0	5.1
	5	0.0	5.1
	6	0.0	5.1
	7	0.0	0.0
	8	5.1	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	0.0	0.0
	12	5.5	5.1
	13	5.5	5.1
	14	5.1	5.1
IC17	1	2.9	2.6
	2	0.0	0.3
	3	0.8	4.0
	4	3.9	3.9
	5	3.8	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.1	0.0
	10	0.1	0.0
	11	0.1	0.1
	12	0.1	0.2
	13	0.1	0.2
	14	3.2	3.3
	15	0.0	0.2
	16	2.5	2.3
	17	2.5	2.3
	18	5.0	5.1
IC18	1	5.9	6.0
	2	5.9	6.0
	3	5.9	6.0
	4	5.9	6.0
	5	5.9	6.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.1
	10	0.0	6.1
	11	5.9	6.0
	12	5.9	6.0
	13	5.9	6.0
	14	5.9	6.0
	15	5.9	6.0
	16	12.0	12.2
IC19	1	8.4	8.9
	2	0.0	8.9
	3	8.4	8.9
	4	0.0	0.0
	5	0.0	0.0
	6	8.4	8.5
	7	8.0	8.0
	8	7.6	7.7
	9	12.0	12.2
IC20	1	6.6	6.6
	2	12.1	12.2
	3	2.7	2.8
	4	0.0	0.0
IC21	1	12.1	12.2
	2	7.6	7.8
	3	4.7	4.1
	4	0.0	0.6
	5	8.4	8.0
	6	8.0	8.0
	7	8.4	8.6

SYMBOL No.		REC	PB
IC22	1	9.9	10.0
	2	9.9	10.0
	3	11.3	11.2
	4	11.3	11.2
	5	11.3	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	6.0	6.1
	10	5.9	6.1
	11	0.0	0.1
	12	10.0	9.9
	13	8.6	8.7
	14	10.0	9.9
	15	9.9	10.0
	16	12.1	12.2
IC23	1	3.6	3.6
	2	0.0	0.0
	3	3.5	3.9
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	3.8	3.8
	8	5.1	5.1
	9	2.5	2.6
IC24	1	5.1	0.8
	2	5.1	0.8
	3	0.0	5.1
	4	4.2	4.4
	5	5.1	0.8
	6	0.0	5.1
	7	0.0	0.0
	8	5.1	5.2
	9	0.0	5.1
	10	5.1	0.0
	11	5.1	0.0
	12	5.1	5.1
	13	0.0	5.1
	14	5.1	0.1
IC25	1	0.0	0.1
	2	3.8	3.9
	3	3.6	3.6
	4	12.1	12.0
	5	0.3	0.3
	6	0.0	0.0
	7	1.4	1.4
	8	5.9	5.9
	9	3.4	3.4
	10	5.9	5.9
IC26	1	0.0	0.1
	2	3.9	3.9
	3	3.6	3.6
	4	12.1	12.0
	5	0.3	0.3
	6	0.0	0.0
	7	1.4	1.4
	8	5.9	5.9
	9	3.4	3.4
	10	5.9	5.9
IC27	1	6.4	6.6
	2	12.0	12.2
	3	2.7	2.8
	4	0.0	0.0
IC28	1	6.6	6.5
	2	12.1	12.2
	3	2.7	2.8
	4	0.0	0.0
IC29	1	6.5	6.6
	2	12.1	12.2
	3	2.7	2.8
	4	0.0	0.0

TRANSISTOR

Q1	B	5.7	6.0
	C	11.8	12.1
	E	5.1	5.3
Q2	B	3.1	3.2
	C	10.7	11.0
	E	2.4	2.5

SYMBOL No.		REC	PB
Q3	D	0.0	0.0
	G	4.7	4.8
	S	0.0	0.0
Q4	D	0.0	0.1
	G	4.6	4.8
	S	0.0	0.0
Q5	B	0.0	0.1
	C	0.1	0.0
	E	0.0	0.0
Q6	B	4.0	4.3
	C	11.8	12.1
	E	3.3	3.6
Q7	B	9.9	10.2
	C	11.8	12.1
	E	9.2	9.5
Q8	B	5.8	5.9
	C	11.8	12.1
	E	5.2	5.3
Q9	B	3.0	3.2
	C	9.4	9.6
	E	2.4	2.5
Q10	B	3.9	4.3
	C	11.8	12.1
	E	3.3	3.6
Q11	B	7.6	8.0
	C	11.8	12.1
	E	7.0	7.3
Q12	B	7.0	7.0
	C	11.8	11.8
	E	6.4	6.4
Q13	B	4.1	4.1
	C	11.8	11.8
	E	3.5	3.5
Q14	B	4.1	4.1
	C	11.8	11.8
	E	3.5	3.5
Q15	D	0.0	0.0
	G	4.8	4.8
	S	0.0	0.0
Q16	B	0.0	0.0
	C	9.0	0.0
	E	0.0	0.0
Q17	B	0.0	0.0
	C	0.0	0.0
	E	0.7	0.7
Q18	B	5.0	5.1
	C	0.1	5.1
	E	5.1	5.1
Q19	B	-0.1	0.1
	C	0.0	0.1
	E	0.0	0.0
Q20	B	2.2	0.1
	C	2.3	0.2
	E	0.0	0.0
Q21	B	0.0	0.1
	C	0.0	0.0
	E	0.0	0.0
Q22	B	0.0	0.2
	C	0.0	0.0
	E	0.0	0.0
Q23	D	0.0	0.0
	G	5.6	5.6
	S	0.0	0.0
Q24	D	3.1	0.0
	G	3.2	3.2
	S	0.0	0.0

— DC voltage(2/2) —

SYMBOL No.		REC	PB
Q25	B	5.9	6.0
	C	12.0	12.2
	E	5.2	5.4
Q27	B	5.1	0.0
	C	0.0	8.9
	E	0.0	0.0
Q28	B	5.6	7.7
	C	0.0	0.0
	E	6.3	8.3
Q29	B	4.2	4.2
	C	12.1	12.1
	E	3.5	3.5
Q30	B	1.8	1.8
	C	0.0	0.0
	E	2.4	2.4
Q31	D	0.7	0.0
	G	1.2	4.8
	S	0.0	0.0
Q32	B	0.7	0.0
	C	0.0	0.0
	E	0.0	0.0
Q33	B	1.3	1.3
	C	5.9	5.9
	E	0.6	0.6
Q34	B	5.9	5.9
	C	12.1	12.1
	E	5.3	5.3
Q36	B	3.1	3.1
	C	9.6	9.6
	E	2.5	2.5
Q37	B	2.5	2.5
	C	10.6	10.6
	E	1.9	1.9
Q38	B	10.6	10.6
	C	12.1	12.1
	E	9.9	9.9
Q40	B	3.1	3.2
	C	9.6	9.7
	E	2.5	2.5
Q41	B	2.5	1.9
	C	12.0	11.8
	E	1.9	2.5
Q42	B	12.0	12.0
	C	12.1	12.1
	E	11.3	11.3
Q43	B	9.9	9.3
	C	12.1	12.1
	E	9.3	10.0
Q44	B	9.9	9.3
	C	12.1	12.2
	E	9.3	10.0
Q45	B	9.3	8.7
	C	12.1	12.2
	E	8.6	9.3
Q46	B	11.3	10.5
	C	12.1	12.2
	E	10.6	11.2
Q47	B	11.3	11.3
	C	12.1	12.1
	E	10.6	10.7
Q48	B	10.6	9.9
	C	12.1	12.2
	E	10.0	10.5
Q49	B	10.0	9.3
	C	12.1	12.2
	E	9.3	9.9

SYMBOL No.		REC	PB
Q50	D	5.1	0.0
	G	0.0	4.0
	S	0.0	0.0
Q51	D	0.0	0.0
	G	6.0	5.3
	S	0.0	0.0
Q52	D	4.6	0.1
	G	0.0	0.0
	S	0.0	0.0
Q53	D	0.0	0.2
	G	4.6	4.8
	S	0.0	0.0
Q54	D	0.0	0.2
	G	0.0	0.1
	S	0.0	0.0
Q55	D	0.3	4.8
	G	4.8	0.0
	S	0.0	0.0
Q56	D	0.1	0.1
	G	4.6	4.7
	S	0.0	0.0
Q57	D	0.1	0.1
	G	4.6	4.6
	S	0.0	0.0
Q58	D	0.1	0.1
	G	3.8	3.9
	S	0.0	0.0
Q59	D	0.1	0.1
	G	3.9	3.9
	S	0.0	0.0
Q60	B	5.9	6.0
	C	12.1	12.2
	E	5.2	5.4
Q61	B	15.0	15.1
	C	0.0	0.0
	E	0.0	0.0
Q62	B	5.6	7.7
	C	12.1	12.2
	E	5.3	7.0
Q63	D	4.8	4.8
	G	0.0	0.0
	S	0.0	0.0
Q64	D	0.0	0.1
	G	4.8	4.8
	S	0.0	0.0
Q65	D	4.8	4.8
	G	0.0	0.0
	S	0.0	0.0

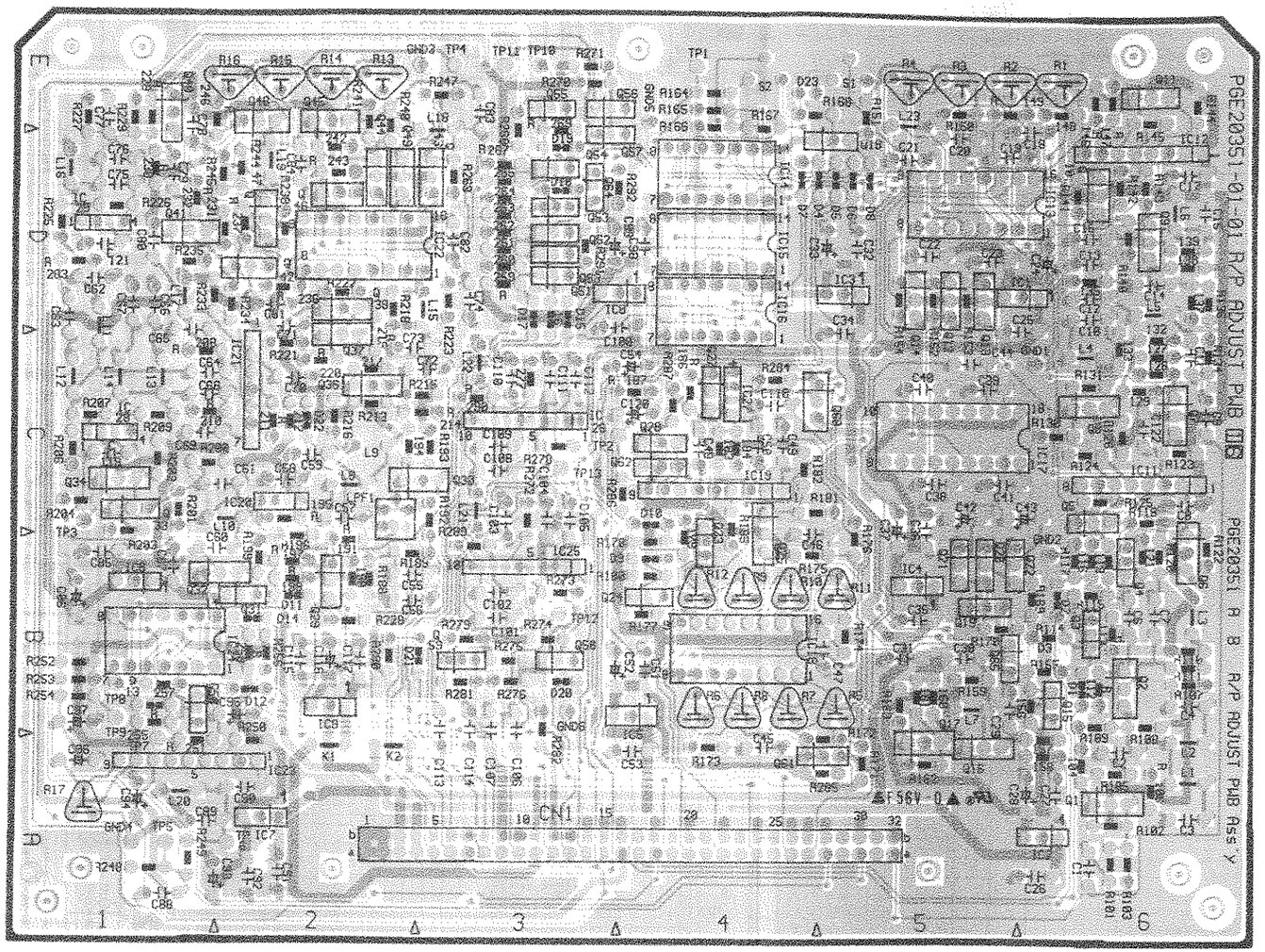
CONNECTOR

		REC	PB
CN1	4AB	14.9	14.9
	3AB	7.5	7.5
	2AB	0.0	0.0
	1AB	0.0	0.0
	32A	3.6	4.0
	32B	0.0	0.0
	17A	4.5	4.5
	17B	4.4	4.4
	14A	0.0	0.0
	14B	0.0	0.0
	7A	4.8	0.6
	7B	0.6	4.8
	6A	5.0	0.2
	19A	4.5	4.5
	24A	0.0	0.0
	24B	0.0	0.0

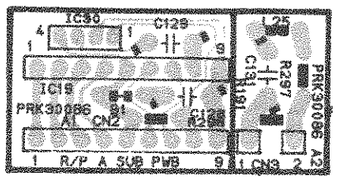
SYMBOL No.		REC	PB
CN1	8B	0.6	4.6
	18A	5.3	5.3
	18B	0.0	0.0
	8A	3.8	0.0
	6B	5.1	5.1
	5A	5.3	5.3
	28A	4.6	4.7
	28B	0.0	0.0
	5B	15.0	15.0
	22A	4.6	4.6
	22B	0.0	0.0
	26A	0.0	0.0
	26B	0.0	0.0
	27A	5.2	5.3
	27B	0.0	0.0
	20B	0.0	0.0
	20A	2.6	0.0
	30A	9.3	9.4
	30B	0.0	0.0
	16B	0.0	0.0
	15B	0.0	0.0
	16A	8.9	8.9
	15A	0.3	4.6
	11A	14.9	14.9
	11B	0.0	0.0
	10A	0.0	0.0
	10B	0.0	0.0
	9B	0.0	0.0
	9A	0.0	0.0
	13A	3.7	3.6
	13B	0.0	0.0
	12A	3.7	3.7
	12B	0.0	0.0

4.32 REC/PB ADJUST CIRCUIT BOARD

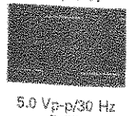
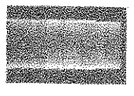
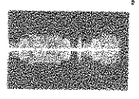
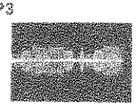
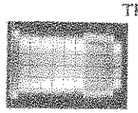
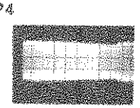
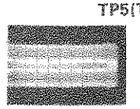
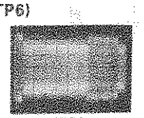
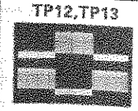
— REC/PB ADJUST —



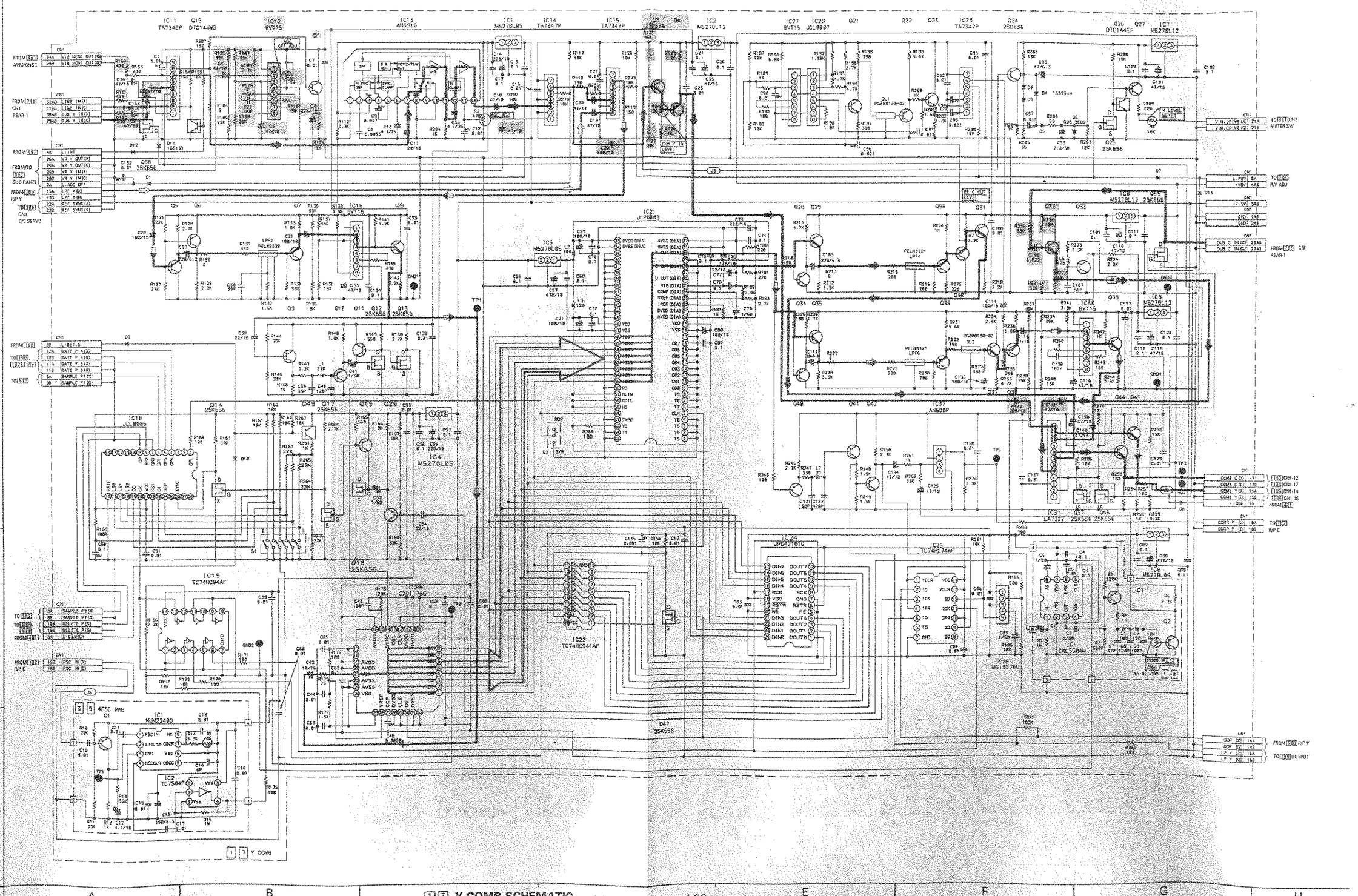
— R/P ADJ SUB —



— MAIN WAVEFORMS OF R/P ADJUST CIRCUIT —

TP1(TP8)	TP2		TP3		TP4		TP5(TP6)				TP10	TP12,TP13
												
5.0 Vp-p/30 Hz D.FF	[REC] 2.3 Vp-p — S-VHS —	[REC] 1.7 Vp-p — VHS —	[PB] Burst level 1.0 Vp-p — S-VHS —	[PB] Burst level 1.4 Vp-p — VHS —	[PB] 280 mVp-p — S-VHS —	[PB] 350 mVp-p — VHS —	[REC] 0.9 Vp-p — S-VHS —	[REC] 0.6 Vp-p — VHS —	[PB] 460 mVp-p — S-VHS —	[PB] 390 mVp-p — VHS —	[PB] 5.0 Vp-p	[VIDEO INSERT] UPPER: TP12 LOWER: TP13

4.33 Y COMB SCHEMATIC DIAGRAM



— DC voltage(1/2) —

SYMBOL	No.	REC	PB
INTEGRATED CIRCUIT			
IC1	1	5.0	5.0
	2	0.0	0.0
	3	7.5	7.5
IC2	1	12.1	11.8
	2	0.0	0.0
	3	14.9	15.0
IC4	1	5.0	5.1
	2	0.0	0.0
	3	7.5	7.4
IC5	1	5.1	5.1
	2	0.0	0.0
	3	7.5	7.5
IC6	1	5.1	5.0
	2	0.0	0.0
	3	7.5	7.5
IC7	1	12.1	11.9
	2	0.0	0.0
	3	14.9	14.9
IC8	1	12.1	11.9
	2	0.0	0.0
	3	14.9	14.9
IC9	1	11.9	11.9
	2	0.0	0.0
	3	14.9	14.9
IC11	1	8.4	8.2
	2	0.0	0.4
	3	8.4	8.2
	4	0.0	0.6
	5	0.0	0.0
	6	8.4	8.2
	7	0.0	0.0
	8	7.6	7.4
	9	12.0	11.8
IC12	1	12.0	12.1
	2	3.0	3.0
	3	3.0	3.0
	4	9.2	9.2
	5	2.3	2.3
	6	2.3	2.3
	7	0.0	0.0
	8	1.6	1.6
IC13	1	4.6	0.1
	2	3.0	1.1
	3	5.0	5.0
	4	1.9	1.9
	5	1.6	1.4
	6	2.2	1.2
	7	3.0	9.9
	8	0.0	0.0
	9	3.0	3.0
	10	0.0	0.0
	11	2.6	2.6
	12	3.2	3.1
	13	3.0	3.1
	14	2.3	1.6
IC14	1	8.4	8.2
	2	0.0	0.2
	3	8.4	8.2
	4	0.0	0.0
	5	8.2	8.3
	6	7.6	7.3
	7	12.0	11.8
IC15	1	8.4	8.2
	2	0.0	0.2
	3	8.4	8.2
	4	0.0	0.0
	5	5.0	0.8
	6	7.6	7.4
	7	12.0	11.8

SYMBOL	No.	REC	PB
IC16	1	12.0	11.8
	2	3.6	3.5
	3	3.5	3.5
	4	9.4	8.6
	5	2.8	2.8
	6	2.8	2.8
	7	0.0	0.0
	8	1.4	1.3
IC18	1	4.8	4.9
	2	0.0	0.1
	3	0.1	0.2
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	0.2	0.1
	12	0.2	0.3
	13	0.2	0.3
	14	0.2	0.1
	15	0.0	0.0
	16	0.0	4.6
	17	0.0	4.6
	18	0.0	0.1
	19	5.4	5.1
	20	2.4	2.3
	21	5.0	5.1
	22	5.0	5.0
	23	5.0	0.1
	24	5.0	5.1
	25	0.4	0.4
	26	0.4	0.4
	27	0.0	0.1
	28	0.2	0.3
IC19	1	2.4	2.4
	2	2.4	2.4
	3	2.4	2.4
	4	2.7	2.4
	5	2.4	2.4
	6	2.7	2.7
	7	0.0	0.0
	8	5.0	5.1
	9	5.0	0.1
	10	5.0	5.1
	11	5.0	0.1
	12	2.7	2.4
	13	2.4	2.4
	14	5.0	5.1
IC20	1	2.3	2.3
	2	2.3	2.3
	3	3.0	3.1
	4	3.0	3.1
	5	5.0	5.0
	6	2.4	2.4
	7	1.1	1.1
	8	5.0	5.0
	9	7.9	7.9
	10	0.0	0.0
	11	5.5	5.5
	12	5.2	5.2
	13	0.0	0.4
	14	0.6	4.4
	15	4.5	0.6
	16	5.5	5.2
	17	2.2	2.5
	18	5.1	5.1
	19	0.0	0.0
	20	0.0	0.0
	21	0.0	0.0
	22	0.0	0.0
	23	0.6	0.6
	24	0.6	0.6
	25	0.0	0.0
	26	0.0	0.0
	27	0.0	0.0
	28	0.0	0.0
	29	0.0	0.0
	30	0.0	0.0
	31	0.0	0.0
	32	0.0	0.0

SYMBOL	No.	REC	PB
IC21	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	2.7	2.7
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	0.0	0.0
	12	0.0	0.0
	13	0.0	0.0
	14	0.0	0.0
	15	0.0	0.0
	16	0.0	0.0
	17	0.0	0.0
	18	0.0	0.0
	19	5.0	5.0
	20	5.0	5.0
	21	5.0	5.0
	22	2.2	2.2
	23	2.2	2.2
	24	2.8	2.9
	25	1.7	1.7
	26	1.2	1.3
	27	0.0	0.0
	28	4.3	4.3
	29	0.0	0.0
	30	4.2	4.2
	31	0.0	0.0
	32	0.0	0.0
	33	5.0	5.0
	34	0.0	0.0
	35	0.0	0.0
	36	0.0	0.0
	37	0.0	0.0
	38	0.0	0.0
	39	0.0	0.0
	40	0.0	0.0
	41	0.0	0.0
	42	0.0	0.0
	43	0.0	0.0
	44	0.0	0.0
	45	0.0	0.0
	46	5.0	5.0
	47	0.0	0.9
	48	1.7	1.9
	49	1.6	1.7
	50	1.9	1.9
	51	1.5	1.4
	52	2.2	2.2
	53	1.9	1.9
	54	2.2	2.2
	55	2.2	2.2
	56	0.0	0.0
	57	5.0	5.0
	58	5.5	5.5
	59	5.4	5.4
	60	0.0	0.0
	61	5.0	5.0
	62	5.0	5.0
	63	0.0	0.0
	64	0.0	0.0
IC22	1	0.0	0.0
	2	1.2	1.5
	3	1.7	1.3
	4	1.4	1.4
	5	1.6	1.5
	6	2.2	2.4
	7	2.2	1.8
	8	0.0	0.0
	9	0.0	0.0
	10	0.3	0.3
	11	0.3	0.3
	12	0.3	0.3
	13	3.9	3.9
	14	4.9	4.7
	15	1.1	1.2
	16	1.5	1.1
	17	5.1	5.0
	18		
	19		
	20		

SYMBOL	No.	REC	PB
IC24	1	2.1	2.9
	2	2.1	2.1
	3	2.0	2.0
	4	5.0	5.0
	5	5.0	5.0
	6	2.6	2.6
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	0.0	0.0
	12	0.0	0.0
	13	1.7	1.9
	14	2.6	2.7
	15	1.1	1.1
	16	2.5	2.5
	17	2.5	2.5
	18	5.1	5.1
	19	5.0	5.0
	20	2.6	2.6
	21	2.9	3.0
	22	2.6	2.6
	23	2.6	2.6
	24	0.0	2.2
IC25	1	5.1	5.0
	2	0.0	0.0
	3	2.7	2.7
	4	5.1	5.0
	5	0.0	0.0
	6	5.1	5.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.1	0.1
	10	5.1	5.1
	11	5.1	5.1
	12	5.1	5.1
	13	5.1	5.1
	14	5.1	5.0
IC26	1	5.1	5.0
	2	1.6	1.6
	3	0.0	0.0
	4	1.3	1.3
	5	5.1	5.0
IC27	1	9.7	9.5
	2	7.7	9.9
	3	8.3	8.3
	4	7.3	9.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.1
	8	1.1	1.1
IC28	1	9.7	9.5
	2	12.1	11.9
	3	9.8	9.7
	4	8.3	10.4
	5	8.6	8.6
	6	0.5	0.5
	7	0.6	0.5
	8	5.6	5.6
IC29	1	8.4	8.3
	2	0.0	0.0
	3	8.4	8.3
	4	0.0	0.0
	5	0.0	0.0
	6	7.6	7.5
	7	12.1	11.9
IC30	1	11.9	9.1
	2	3.1	1.2
	3	3.1	4.4
	4	3.3	3.3
	5	3.3	3.3
	6	2.6	2.6
	7	0.0	0.3
	8	1.3	1.3

— DC voltage(2/2) —

SYMBOL	No.	REC	PB
IC31	1	0.0	0.2
	2	0.1	0.0
	3	0.0	0.0
	4	0.1	0.0
	5	7.8	7.9
	6	0.0	0.0
	7	7.9	7.9
	8	7.9	7.9
	9	11.9	11.9
	10	7.8	7.8
	11	7.8	7.8
	12	7.9	7.9
IC32	1	6.9	7.1
	2	11.9	11.9
	3	2.7	2.7
	4	0.0	0.0
IC33	1	0.3	0.3
	2	1.6	1.0
	3	1.0	1.0
	4	5.8	5.8
	5	2.8	2.7

TRANSISTOR

Q1	B	9.2	7.6
	C	12.5	12.5
	E	8.5	6.9
Q3	B	6.2	6.3
	C	12.5	12.5
	E	5.6	5.6
Q4	B	3.2	3.4
	C	0.8	0.0
	E	3.8	4.0
Q5	B	6.1	6.1
	C	0.0	0.0
	E	6.7	6.8
Q6	B	6.1	6.1
	C	12.5	12.5
	E	5.4	5.5
Q7	B	2.4	2.4
	C	0.0	0.0
	E	3.0	3.0
Q8	B	9.4	8.7
	C	12.5	12.5
	E	8.8	8.1
Q9	B	3.7	3.8
	C	5.0	5.1
	E	3.1	3.1
Q10	B	3.1	3.1
	C	0.5	0.0
	E	3.7	3.7
Q11	B	0.7	0.6
	C	5.0	5.1
	E	3.5	3.6
Q12	B	0.7	0.6
	C	3.5	3.6
	E	0.0	0.0
Q13	B	4.6	4.7
	C	0.7	0.6
	E	0.0	0.0
Q14	B	0.4	0.4
	C	4.6	4.6
	E	0.0	0.0
Q15	B	9.9	9.8
	C	0.0	0.0
	E	0.0	0.0
Q17	B	4.6	4.6
	C	0.8	0.7
	E	0.0	0.0
Q18	B	0.8	0.7
	C	3.6	3.4
	E	0.0	0.0

SYMBOL	No.	REC	PB
Q19	B	0.8	0.7
	C	5.0	5.1
	E	3.0	3.4
Q20	B	3.9	3.9
	C	0.0	0.0
	E	4.4	4.5
Q21	B	3.8	3.7
	C	9.0	8.6
	E	3.1	3.0
Q22	B	9.0	8.8
	C	0.0	0.0
	E	9.6	9.4
Q23	B	9.6	9.4
	C	12.1	11.8
	E	8.9	8.7
Q24	B	6.3	6.3
	C	12.1	11.9
	E	5.6	5.6
Q25	D	0.0	9.9
	S	5.0	0.0
	G	0.0	0.0
Q26	B	0.1	9.9
	C	1.0	0.0
	E	0.0	0.0
Q27	B	1.5	0.0
	C	12.1	11.9
	E	1.1	0.2
Q28	B	4.3	4.3
	C	0.0	0.0
	E	4.9	4.9
Q29	B	4.3	4.3
	C	12.1	11.8
	E	3.6	3.6
Q30	B	7.1	6.8
	C	0.7	0.0
	E	7.7	7.4
Q31	B	9.9	9.6
	C	12.1	11.8
	E	9.3	9.0
Q32	B	8.9	8.7
	C	12.8	11.8
	E	8.2	8.1
Q33	B	7.2	7.3
	C	0.0	0.0
	E	7.8	8.0
Q34	B	4.2	4.2
	C	0.0	0.0
	E	4.8	4.8
Q35	B	4.2	4.2
	C	11.9	12.5
	E	3.5	3.5
Q36	B	1.7	1.7
	C	0.0	0.0
	E	2.3	2.4
Q37	B	2.3	2.4
	C	11.8	12.0
	E	1.1	1.8
Q38	B	1.8	1.8
	C	0.0	0.0
	E	2.4	2.4
Q39	B	9.3	9.4
	C	11.9	12.0
	E	8.7	8.8
Q40	B	4.2	4.2
	C	0.0	0.0
	E	4.8	4.8

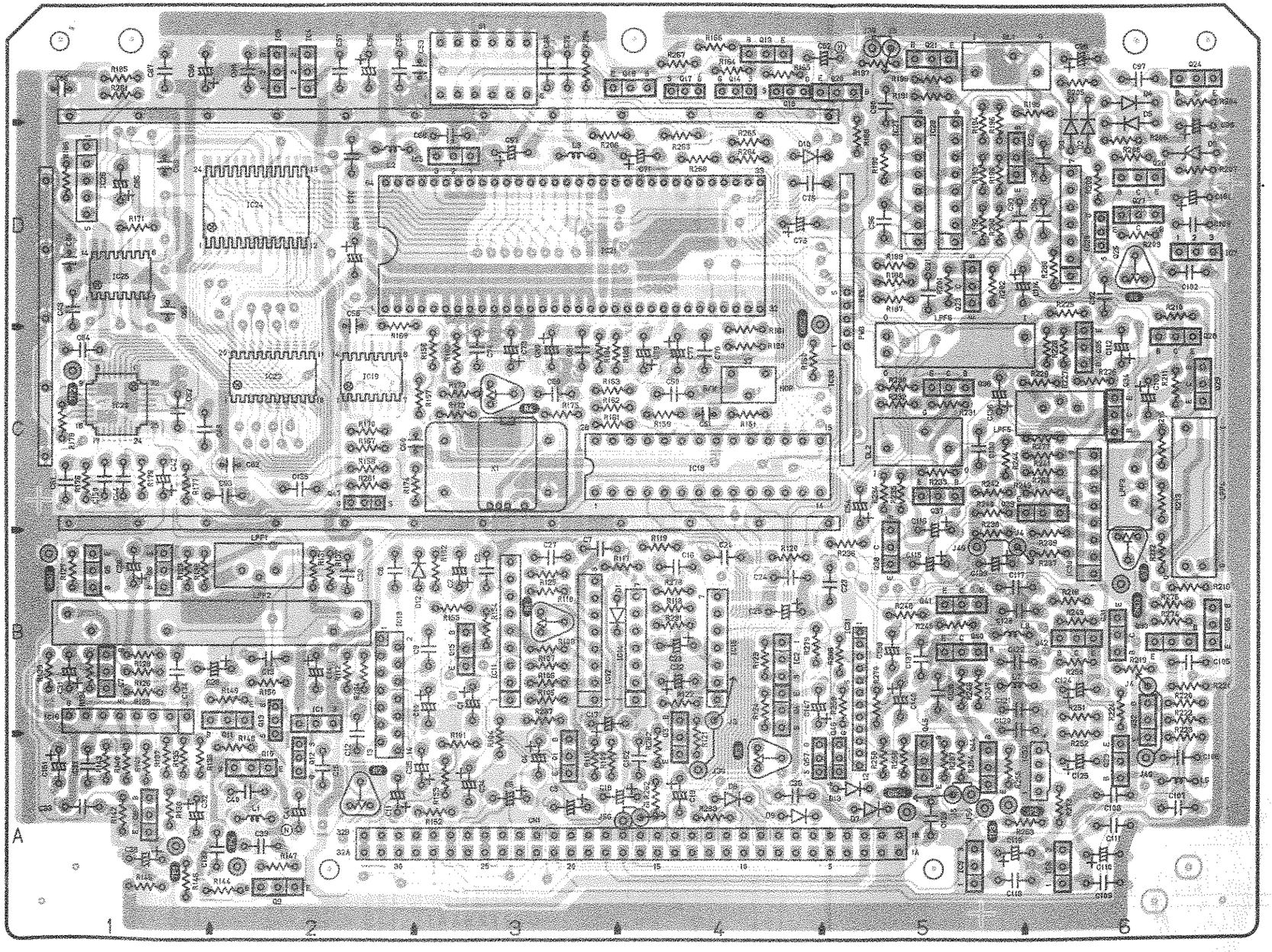
SYMBOL	No.	REC	PB
Q41	B	4.8	4.8
	C	11.9	12.0
	E	4.2	4.2
Q42	B	2.1	2.1
	C	0.0	0.0
	E	2.8	2.7
Q44	B	7.2	7.3
	C	11.9	12.0
	E	6.5	6.7
Q45	B	7.2	7.3
	C	11.9	12.0
	E	6.5	6.7
Q46	D	0.1	0.0
	S	4.5	4.6
	G	0.0	0.0
Q47	D	5.1	5.0
	S	0.0	0.0
	G	0.0	0.0
Q49	B	5.0	0.7
	C	0.0	5.0
	E	5.0	5.1
Q56	B	1.8	1.8
	C	7.1	6.8
	E	1.1	1.1
Q57	D	0.1	0.0
	S	4.5	4.6
	G	0.0	0.0

SYMBOL	No.	REC	PB
CONNECTOR			
CN1	30AB	0.0	0.0
	29AB	0.0	0.0
	32AB	0.0	0.0
	31AB	0.0	0.0
	24A	0.0	0.0
	24B	0.0	0.0
	5B	9.7	9.6
	25A	0.0	0.0
	25A	0.0	0.0
	26B	0.0	0.0
	25B	0.0	0.0
	7A	9.3	9.3
	13A	9.3	9.3
	13B	3.0	3.0
	22A	4.6	0.0
	22B	0.0	0.0
	6B	5.1	0.2
	12A	0.0	0.0
	12B	0.0	0.0
	11A	0.0	0.0
	11B	0.0	0.0
	9A	0.0	0.0
	9B	0.0	0.0
	8A	0.0	0.0
	8B	0.0	0.0
	10A	0.0	0.0
	10B	0.0	0.0
	5A	5.4	0.2
	21A	1.1	0.2
	21B	0.0	0.0
	6A	5.0	0.2
	4AB	14.9	14.9
	3AB	7.5	7.5
	1AB	0.0	0.0
	2AB	0.0	0.0
	28AB	0.2	0.2
	27AB	0.0	0.0
	17A	6.5	6.7
	17B	0.5	0.0
	15A	6.5	6.7
	15B	0.0	0.0
	7B	4.3	4.3
	18A	7.8	7.8
	18B	0.0	0.0
	14A	0.0	0.0
	14B	0.0	0.0
	16A	4.2	4.2
	16B	0.0	0.0
1H DELAY <18>			
INTEGRATED CIRCUIT			
IC1	1	2.1	2.1
	2	0.1	0.0
	3	1.0	0.8
	4	0.5	0.5
	5	0.2	0.2
	6	2.5	2.6
	7	1.2	1.2
	8	5.0	5.0

4.34 Y COMB CIRCUIT BOARD

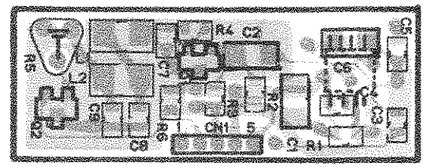
— Y COMB —

— Front —

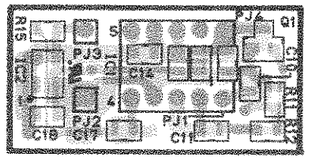


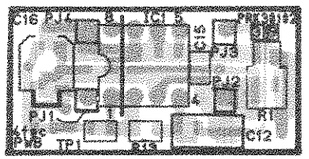
(PRK20123-01-02)

— 1H DELAY —

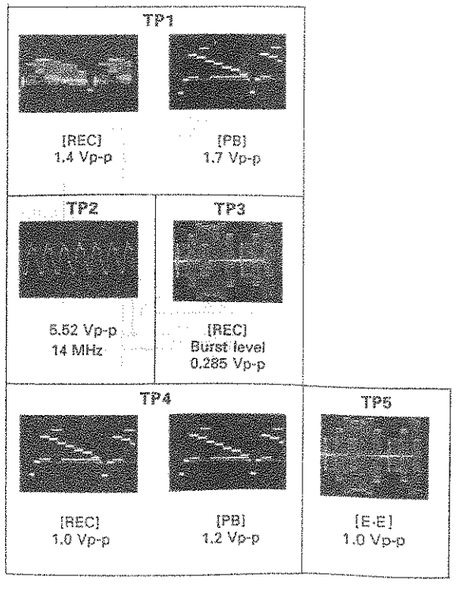


— 4FSC —



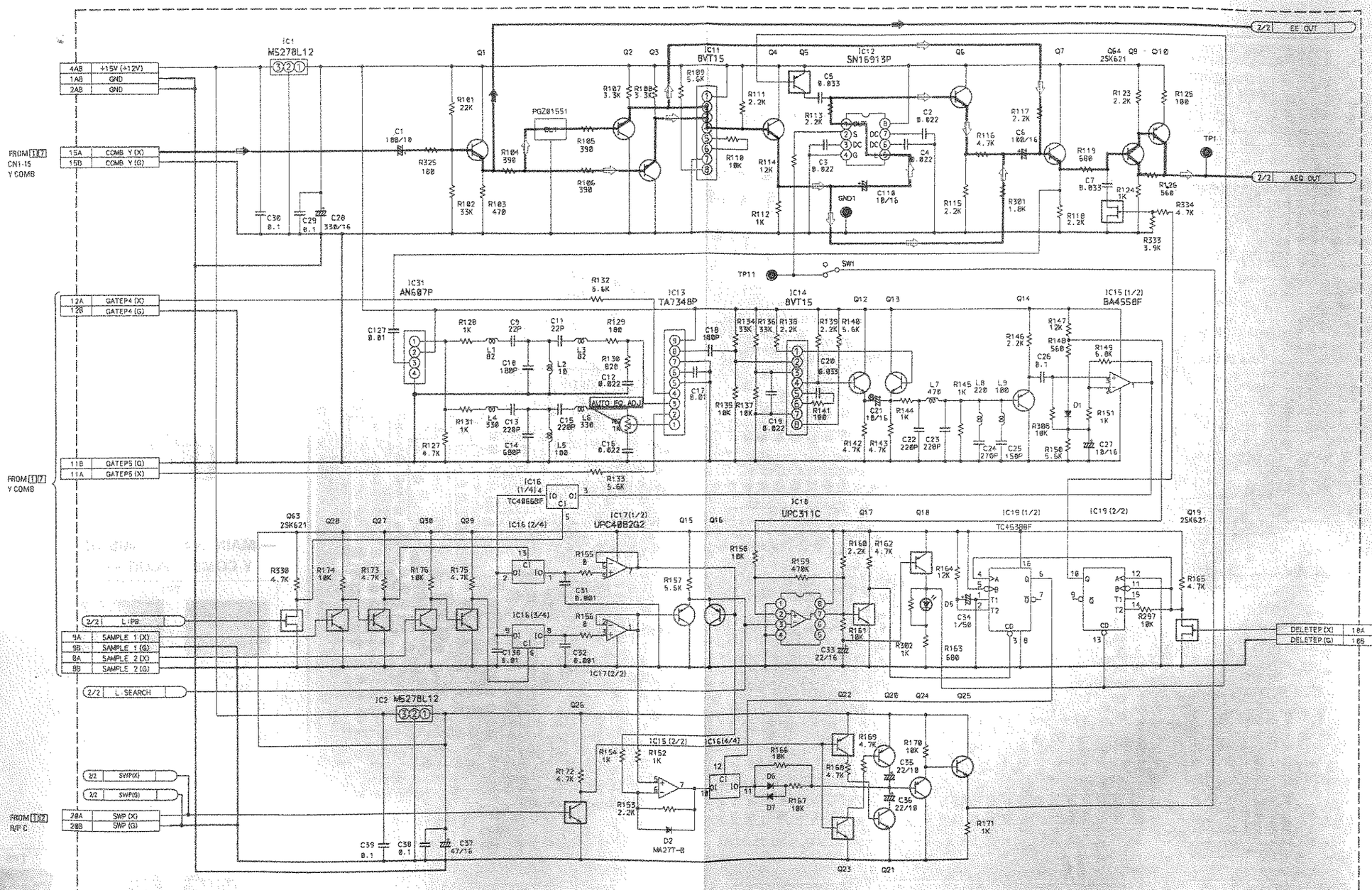


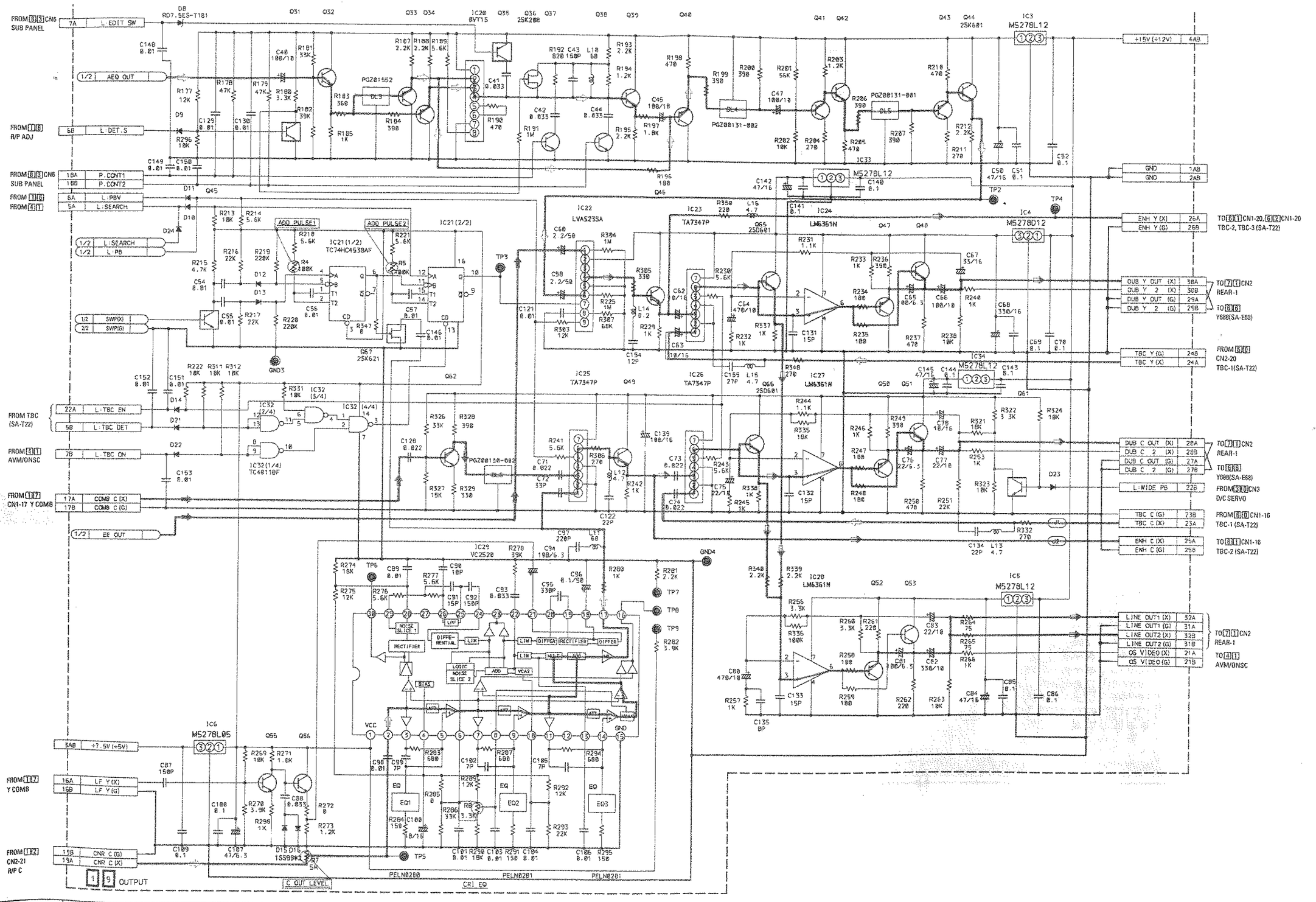
— MAIN WAVEFORMS OF Y COMB CIRCUIT —



4.35 OUTPUT SCHEMATIC DIAGRAM

— DIAGRAM (1/2) —




FROM [8][3] CN6 SUB PANEL
7A L:EDIT SW
1/2 AEO OUT
FROM [1][6] R/P ADJ
6B L:DET.S
FROM [8][3] CN6 SUB PANEL
16A P.CONT1
16B P.CONT2
FROM [1][6]
6A L:PBV
FROM [4][1]
5A L:SEARCH
1/2 L:SEARCH
1/2 L:PB
1/2 SWP(X)
2/2 SWP(G)
FROM TBC (SA-T22)
22A L:TBC EN
5B L:TBC DET
FROM [3][1] AVM/ONSC
7B L:TBC CN
FROM [1][7] CN1-17 Y COMB
17A COMB C (X)
17B COMB C (G)
1/2 EE OUT
FROM [1][7] Y COMB
16A LF Y (X)
16B LF Y (G)
FROM [1][2] CN2-21 R/P C
19B CNR C (G)
19A CNR C (X)
1 9 OUTPUT
3AB +7.5V (+5V)
C OUT LEVEL
+15V (+12V) 4AB
GND 1AB
GND 2AB
ENH Y (X) 26A
ENH Y (G) 26B
TO [8][1] CN1-20, [6][2] CN1-20 TBC-2, TBC-3 (SA-T22)
DUB Y OUT (X) 30A
DUB Y 2 (X) 30B
DUB Y OUT (G) 29A
DUB Y 2 (G) 29B
TO [7][1] CN2 REAR-1
TO [8][6] Y68B(SA-E68)
TBC Y (G) 24B
TBC Y (X) 24A
FROM [8][0] CN2-20 TBC-1(SA-T22)
DUB C OUT (X) 28A
DUB C 2 (X) 28B
DUB C OUT (G) 27A
DUB C 2 (G) 27B
TO [7][1] CN2 REAR-1
TO [6][6] Y68B(SA-E68)
L:WIDE PB 22B
FROM [8][0] CN3 D/C SERVO
TBC C (G) 23B
TBC C (X) 23A
FROM [8][0] CN1-16 TBC-1 (SA-T22)
ENH C (X) 25A
ENH C (G) 25B
TO [8][1] CN1-16 TBC-2 (SA-T22)
LINE OUT1 (X) 32A
LINE OUT1 (G) 31A
LINE OUT2 (X) 32B
LINE OUT2 (G) 31B
OS VIDEO (X) 21A
OS VIDEO (G) 21B
TO [7][1] CN2 REAR-1
TO [4][1] AVM/ONSC
IC1 M5278L05
IC2 TC74HC4053AF
IC3 M5278L12
IC4 M5278D12
IC5 M5278L12
IC6 M5278L05
IC20 BVT15
IC21(1/2) TC74HC4053AF
IC21(2/2)
IC22 LVA5235A
IC23 TA7347P
IC24 LM6361N
IC25 TA7347P
IC26 TA7347P
IC27 LM6361N
IC29 VC2528
IC32 (3/4)
IC32 (4/4)
IC32(1/2) TC4811BF
IC32(2/4)
IC33 M5278L12
IC34 M5278L12
IC20 LM6361N
Q31 Q32 Q33 Q34 Q35 Q36 2SK208 Q37 Q38 Q39 Q40 Q41 Q42 Q43 Q44 25K601 Q45 Q46 Q47 Q48 Q49 Q50 Q51 Q52 Q53 Q54 Q55 Q56 Q57 2SK621 Q58 Q59 Q60 Q61 Q62 Q63 Q64 Q65 2SD601 Q66 2SD601
PGZ01552
PGZ00131-001
PGZ00131-002
PGZ00130-002
PELN0280
PELN0281
PELN0281
CR1 EQ
EQ1
EQ2
EQ3
ADD PULSE1
ADD PULSE2
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9
GND3 GND4

— DC voltage(1/2) —

SYMBOL	No.	REC	PB
INTEGRATED CIRCUIT			
IC1	1	11.8	11.8
	2	0.0	0.0
	3	14.9	14.9
IC2	1	12.1	12.1
	2	0.0	0.0
	3	14.9	14.9
IC3	1	12.1	12.1
	2	0.0	0.0
	3	14.9	14.9
IC4	1	12.0	12.0
	2	0.0	0.0
	3	14.9	14.9
IC5	1	12.0	12.0
	2	0.0	0.0
	3	14.9	14.9
IC6	1	5.0	5.0
	2	0.0	0.0
	3	4.5	4.5
IC11	1	11.8	11.8
	2	6.5	6.5
	3	6.5	6.5
	4	7.6	7.6
	5	5.7	5.8
	6	5.7	5.8
	7	0.0	0.0
	8	1.2	1.2
IC12	1	9.7	9.7
	2	6.1	5.9
	3	4.1	4.1
	4	0.0	0.0
	5	4.0	4.0
	6	5.9	5.9
	7	5.9	5.9
	8	11.8	11.8
IC13	1	8.2	8.2
	2	0.0	0.0
	3	8.2	8.2
	4	0.0	0.0
	5	0.0	0.0
	6	8.2	8.2
	7	0.0	0.0
	8	7.4	7.4
	9	11.8	11.8
IC14	1	7.7	7.7
	2	2.6	2.6
	3	2.6	2.6
	4	7.7	7.7
	5	1.9	1.9
	6	1.9	1.9
	7	0.0	0.0
	8	1.2	1.2
IC15	1	3.4	3.4
	2	3.4	3.4
	3	3.4	3.4
	4	0.0	0.0
	5	1.4	1.4
	6	1.4	1.4
	7	1.4	1.4
	8	11.8	11.8
IC16	1	0.0	0.2
	2	3.4	3.4
	3	1.4	1.4
	4	11.0	11.1
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	1.1	1.0
	9	0.0	0.2
	10	0.0	0.2
	11	1.1	1.1
	12	0.0	0.0
	13	0.1	0.1
	14	12.1	12.1
IC17	1	1.4	1.4
	2	1.4	1.4
	3	1.1	1.0
IC17	4	0.0	0.0
	5	1.1	1.1
	6	1.4	1.4
	7	1.4	1.4
	8	12.1	12.1
IC18	1	0.0	0.0
	2	4.7	4.7
	3	2.0	2.0
	4	0.0	0.0
	5	12.0	12.0
	6	12.0	12.0
	7	11.5	11.5
	8	12.1	12.1
IC19	1	0.0	0.0
	2	12.1	12.1
	3	0.0	0.0
	4	12.1	12.1
	5	12.1	12.1
	6	0.0	0.0
	7	12.1	12.1
	8	0.0	0.0
	9	12.1	12.1
	10	0.0	0.0
	11	12.1	12.1
	12	0.0	0.0
	13	0.5	0.5
	14	12.1	12.1
	15	0.0	0.0
	16	12.1	12.1
IC20	1	12.0	12.1
	2	6.2	6.2
	3	6.2	6.2
	4	7.8	7.8
	5	5.5	5.5
	6	5.5	5.5
	7	0.0	0.0
	8	1.2	1.2
IC21	1	0.0	0.0
	2	4.9	4.9
	3	5.0	5.0
	4	0.0	0.0
	5	4.9	4.9
	6	0.1	0.1
	7	5.0	5.0
	8	0.0	0.0
	9	0.1	0.1
	10	0.0	0.0
	11	0.1	0.1
	12	5.0	5.0
	13	5.0	5.0
	14	5.0	5.0
	15	0.0	0.0
	16	5.0	5.0
IC22	1	4.8	4.8
	2	12.0	12.0
	3	0.0	0.0
	4	4.1	4.1
	5	0.0	0.0
	6	4.8	4.7
	7	0.0	0.0
	8	4.4	4.4
	9	2.3	2.3
IC23	1	8.4	8.4
	2	0.0	0.0
	3	8.4	8.4
	4	0.0	0.0
	5	4.2	4.2
	6	7.6	7.6
	7	12.0	12.0
IC24	1	0.6	0.6
	2	7.6	7.6
	3	7.6	7.6
	4	0.0	0.0
	5	0.0	0.0
	6	7.0	7.0
	7	12.0	12.0
	8	0.5	0.5
IC25	1	8.4	8.4
	2	0.0	0.0
	3	8.4	8.4
	4	0.0	0.0
	5	3.9	3.9
IC25	6	7.6	7.6
	7	12.0	12.0
IC26	1	8.4	8.4
	2	0.0	0.0
	3	8.4	8.4
	4	0.0	0.0
	5	4.2	4.2
	6	7.6	7.6
	7	12.0	12.0
IC27	1	0.6	0.6
	2	7.6	7.6
	3	0.0	0.0
	4	0.0	0.0
	5	0.1	0.0
	6	7.0	7.0
	7	12.0	12.0
	8	0.6	0.5
IC28	1	0.6	0.6
	2	7.6	7.6
	3	7.6	7.6
	4	0.0	0.0
	5	0.1	0.0
	6	7.0	7.0
	7	12.0	12.0
	8	0.6	0.6
IC29	1	5.0	5.0
	2	3.6	3.6
	3	2.8	2.9
	4	3.0	2.9
	5	2.8	2.9
	6	3.0	2.9
	7	3.0	3.1
	8	3.1	3.1
	9	3.1	3.1
	10	3.0	3.0
	11	3.0	3.0
	12	0.0	0.0
	13	2.6	2.5
	14	3.0	3.0
	15	0.0	0.0
	16	1.2	1.2
	17	2.7	2.6
	18	2.2	2.2
	19	1.7	1.6
	20	2.6	2.2
	21	2.2	2.2
	22	2.1	2.1
	23	1.2	1.2
	24	2.6	2.2
	25	2.9	2.9
	26	2.9	2.9
	27	0.0	0.0
	28	1.9	1.9
	29	2.6	2.6
	30	2.1	2.1
IC31	1	6.3	6.3
	2	11.8	11.8
	3	2.7	2.7
	4	0.0	0.0
IC32	1	5.0	5.0
	2	5.0	5.0
	3	0.0	0.0
	4	5.0	5.0
	5	0.0	0.0
	6	5.0	0.0
	7	0.0	0.0
	8	0.6	4.4
	9	0.6	4.4
	10	5.0	0.0
	11	5.0	5.0
	12	0.6	0.6
	13	0.6	0.6
	14	5.0	5.0

TRANSISTOR			
Q1	B	6.3	6.3
	C	11.8	11.8
	E	5.8	5.9
Q2	B	5.9	5.9
	C	0.0	0.0
	E	6.5	6.5
Q3	B	5.9	5.9
	C	0.9	0.0
	E	6.5	6.5
Q4	B	7.6	7.6
	C	11.8	11.8
	E	6.9	6.9
Q5	B	0.5	0.5
	C	11.8	11.8
	E	11.8	11.8
Q6	B	9.7	9.7
	C	11.8	11.8
	E	9.0	9.0
Q7	B	6.5	6.5
	C	11.8	11.8
	E	5.8	5.8
Q8	B	0.0	0.0
	C	0.0	0.0
	E	0.2	0.2
Q9	B	5.8	5.8
	C	10.7	10.7
	E	5.2	5.3
Q10	B	10.7	10.7
	C	7.9	7.9
	E	11.3	11.3
Q12	B	7.7	7.7
	C	11.8	11.8
	E	6.4	6.5
Q13	B	7.7	7.7
	C	11.8	11.8
	E	6.4	6.4
Q14	B	3.2	3.2
	C	0.0	0.0
	E	3.9	3.8
Q15	B	1.4	1.4
	C	0.0	0.0
	E	2.0	2.0
Q16	B	1.2	1.4
	C	0.0	0.0
	E	2.0	2.0
Q17	B	11.5	11.5
	C	0.0	0.0
	E	0.0	0.0
Q18	B	11.6	11.6
	C	0.5	0.5
	E	12.1	12.1
Q19	D	12.1	12.1
	G	0.0	0.0
	S	0.0	0.0
Q20	B	11.5	11.5
	C	12.1	12.1
	E	12.1	12.1
Q21	B	0.7	0.7
	C	0.0	0.0
	E	0.0	0.0
Q22	B	0.0	5.5
	C	6.4	6.4
	E	12.1	12.1
Q23	B	5.5	5.5
	C	5.5	0.0
	E	0.0	0.0
Q24	B	11.1	11.0
	C	0.0	0.0
	E	11.5	11.5
Q25	B	11.6	11.5
	C	12.1	12.1
	E	10.9	10.8
Q26	B	2.6	0.0
	C	0.0	5.5

— DC voltage(2/2) —

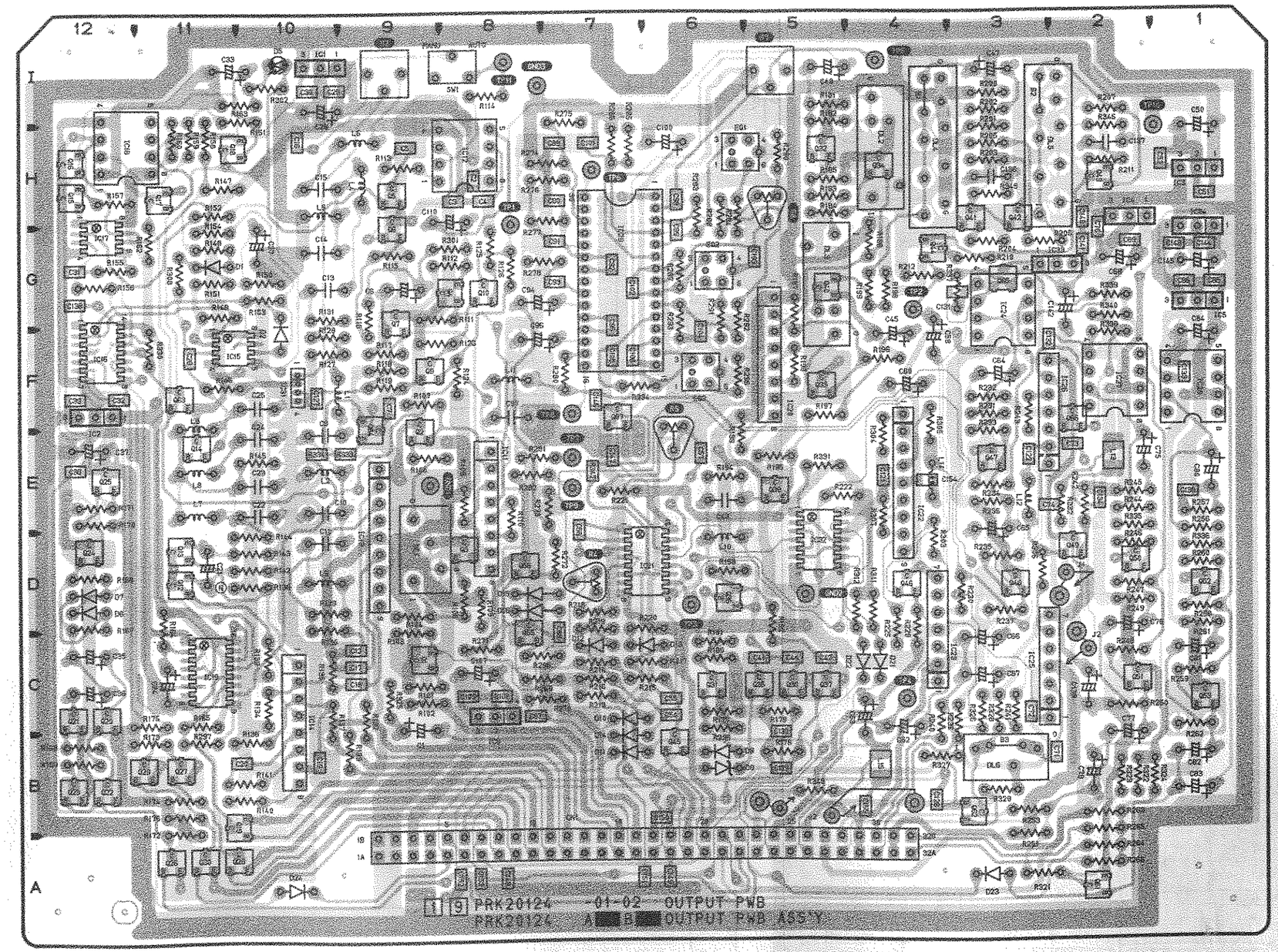
SYMBOL No.		REC	PB
Q26	E	0.0	0.0
Q27	B	9.9	9.9
	C	0.0	0.0
	E	0.0	0.0
Q28	B	0.0	0.0
	C	9.9	9.9
	E	0.0	0.0
Q29	B	9.9	9.9
	C	0.0	0.0
	E	0.0	0.0
Q30	B	0.0	0.0
	C	9.9	9.9
	E	0.0	0.0
Q31	B	4.9	0.7
	C	0.1	12.1
	E	0.0	0.0
Q32	B	6.2	6.2
	C	12.0	12.1
	E	5.6	5.6
Q33	B	5.6	5.6
	C	0.0	0.0
	E	6.2	6.2
Q34	B	5.6	5.6
	C	0.0	0.0
	E	6.2	6.2
Q35	B	7.1	12.0
	C	12.0	0.2
	E	12.1	12.1
Q36	D	0.1	8.4
	G	7.8	0.0
	S	7.8	7.8
Q37	B	0.0	0.7
	C	0.1	0.0
	E	0.0	0.0
Q38	B	0.0	0.7
	C	0.1	0.0
	E	0.0	0.0
Q39	B	7.8	7.8
	C	12.0	12.1
	E	7.2	7.2
Q40	B	6.2	6.2
	C	0.0	0.0
	E	6.8	6.8
Q41	B	1.7	1.7
	C	7.1	7.1
	E	1.1	1.1
Q42	B	7.1	7.1
	C	12.0	12.1
	E	6.5	6.5
Q43	B	3.2	3.2
	C	7.6	7.6
	E	2.6	2.6
Q44	B	7.6	7.6
	C	12.0	12.1
	E	6.9	6.9
Q45	B	0.1	0.0
	C	0.1	2.5
	E	0.0	0.0
Q46	B	4.1	4.1
	C	12.0	12.0
	E	3.5	3.5
Q47	B	7.0	7.0
	C	0.0	0.0
	E	7.6	7.6
Q48	B	7.0	7.0
	C	12.0	12.0
	E	6.3	6.3
Q49	B	7.6	7.6
	C	12.0	12.0
	E	7.0	7.0
Q50	B	7.0	7.0
	C	0.0	0.0
	E	7.6	7.6
Q51	B	7.0	7.0
	C	12.0	12.0
	E	6.3	6.4
Q52	B	7.0	7.0
	C	0.0	0.0
	E	7.6	7.6
Q53	B	7.0	7.0
	C	12.0	12.0
	E	6.4	6.4
Q55	B	1.4	1.4
	C	3.6	3.6
	E	0.8	0.8
Q56	B	3.6	3.6
	C	5.0	5.0
	E	2.9	2.9
Q61	B	0.6	9.9
	C	8.5	0.0
	E	0.0	0.0
Q62	B	3.5	3.5
	C	8.7	8.7
	E	2.8	2.8
Q63	D	0.1	0.1
	G	4.0	4.0
	S	0.0	0.0

CONNECTOR

SYMBOL No.		REC	PB
CN1	4AB	14.9	14.9
	1AB	0.0	0.0
	2AB	0.0	0.0
	15A	6.6	6.6
	15B	0.0	0.0
	12A	0.0	0.0
	12B	0.0	0.0
	11B	0.0	0.0
	11A	0.0	0.0
	9A	0.0	0.0
	9B	0.0	0.0
	8A	0.0	0.0
	8B	0.0	0.0
	20A	2.6	2.6
	20B	0.0	0.0
	10A	0.0	0.0
	10B	0.0	0.0
	7A	0.0	5.3
	6B	5.1	0.2
	18A	0.0	0.7
	18B	0.0	0.7
	6A	5.0	5.0
	5A	5.4	5.4
	20A	0.0	0.0
	20B	0.0	0.0
	22A	4.1	4.1
	5B	0.0	0.0
	7B	0.0	3.9
	17A	6.6	6.6
	17B	0.0	0.0
	3A	7.5	7.5
	3B	7.5	7.5

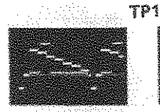
SYMBOL No.		REC	PB
CN1	16A	4.2	4.2
	16B	0.0	0.0
	19B	0.0	0.0
	19A	5.4	5.4
	4AB	14.9	14.9
	1AB	0.0	0.0
	2AB	0.0	0.0
	26A	3.5	3.5
	26B	0.0	0.0
	30A	0.0	0.0
	30B	0.0	0.0
	29A	0.0	0.0
	29B	0.0	0.0
	24B	0.0	0.0
	24A	5.0	5.0
	28A	4.6	0.0
	28B	4.6	0.0
	27A	0.0	0.0
	27B	0.0	0.0
	22B	0.0	9.6
	23B	0.0	0.0
	23A	3.8	3.8
	25A	7.0	7.0
	25B	0.0	0.0
	32A	0.0	0.0
	31A	0.0	0.0
	32B	0.0	0.0
	31B	0.0	0.0
	21A	0.0	0.0
	21B	0.0	0.0

4.36 OUTPUT CIRCUIT BOARD

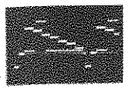


— MAIN WAVEFORMS OF OUTPUT CIRCUIT —

TP1



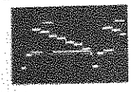
[REC] 0.6 Vp-p



[PB] 0.6 Vp-p

TP2

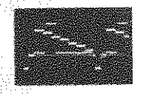
[REC] 0.8 Vp-p



[PB] 1.0 Vp-p

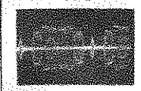
TP4

[REC] 0.9 Vp-p



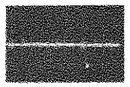
[PB] 1.0 Vp-p

TP5



[PB] Burst level 160 mVp-p

TP6

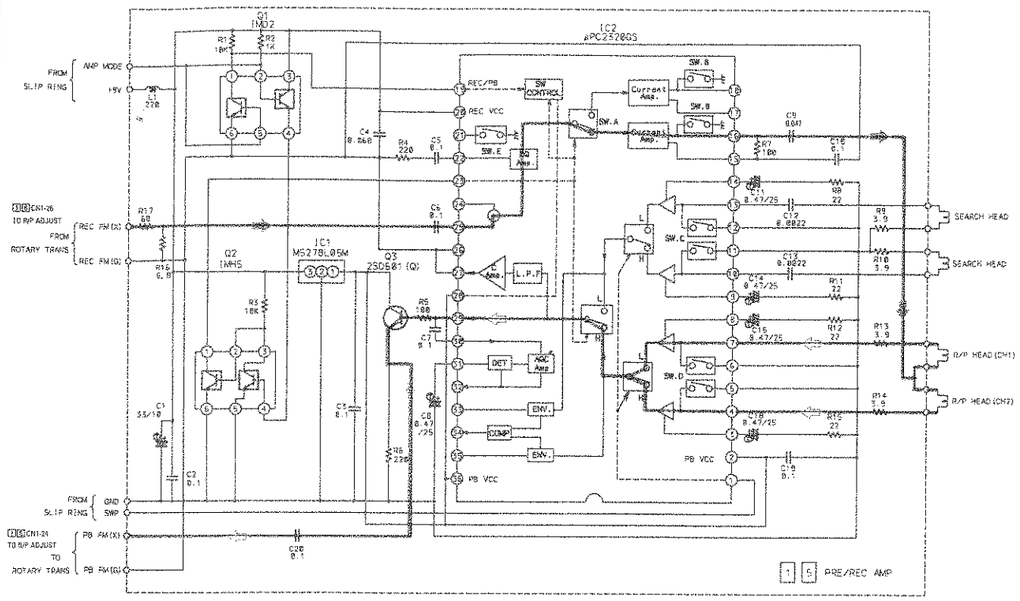


[PB] 1.5 Vp-p

TP8

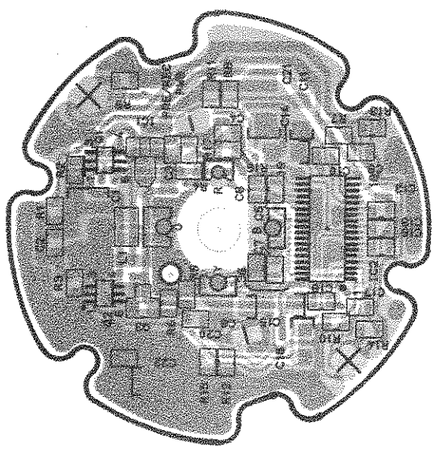
[PB] Burst level 33 mVp-p

4.37 PRE/REC SCHEMATIC DIAGRAM & CIRCUIT BOARD



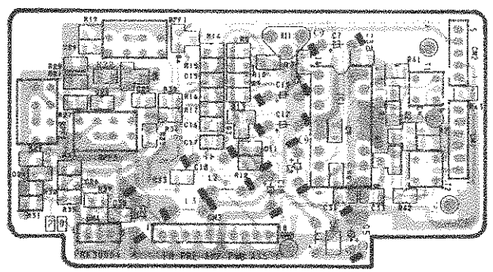
• PRE/REC CIRCUIT BOARD

— Front —

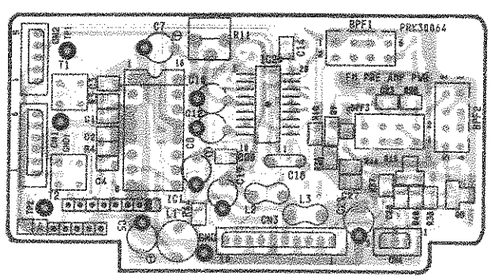


• FM AUDIO PRE/REC CIRCUIT BOARD

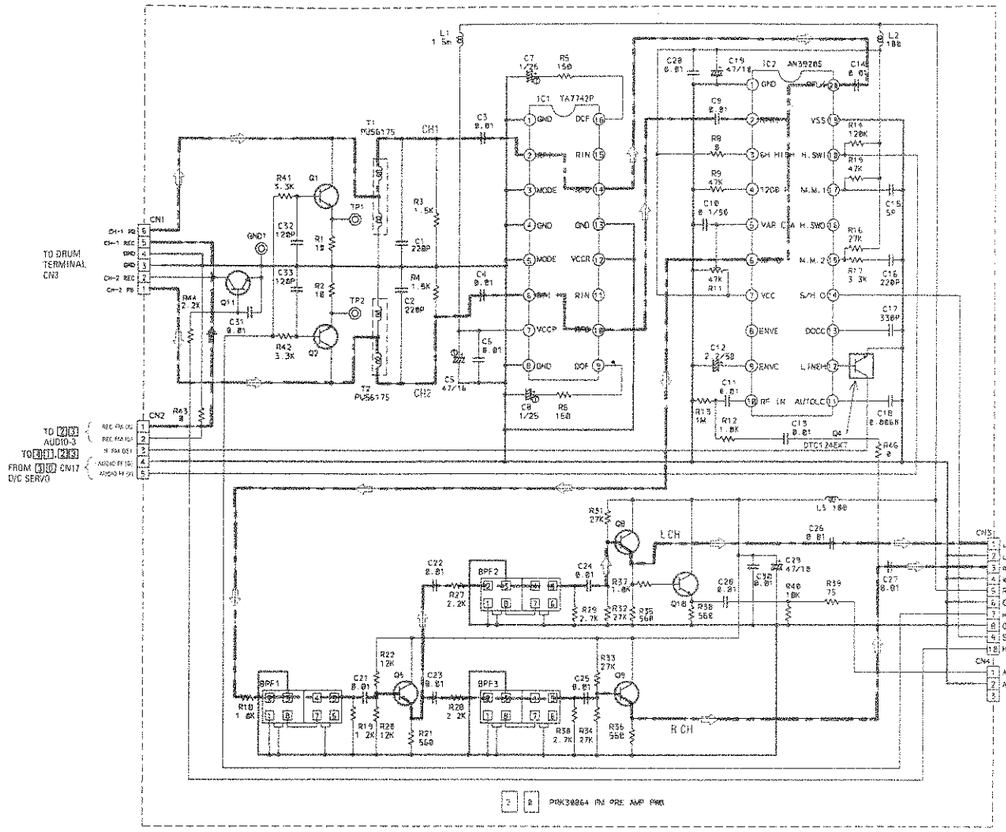
— Rear —



— Front —



4.38 FM AUDIO PRE/REC SCHEMATIC DIAGRAM & CIRCUIT BOARD



— DC Voltage —

SYMBOL No.		REC	PB
INTEGRATED CIRCUIT			
IC1	1	0.0	0.0
	2	0.0	0.7
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.7
	7	0.0	4.7
	8	0.0	0.0
	9	0.0	1.0
	10	0.1	2.5
	11	0.0	0.0
	12	0.0	0.0
	13	0.0	0.0
	14	0.1	2.5
	15	0.0	2.0
	16	0.0	1.0
IC2	1	0.0	0.0
	2	0.0	2.9
	3	0.0	4.8
	4	0.0	0.0
	5	0.0	2.4
	6	0.0	1.8
	7	0.0	4.8
	8	0.0	3.1
	9	0.5	0.4
	10	0.1	3.2
	11	0.0	2.5
	12	0.0	0.0
	13	0.0	3.0
	14	0.0	0.0
	15	0.0	0.1
	16	0.0	2.4
	17	0.0	0.0
	18	0.0	2.6
	19	0.0	0.0
	20	0.0	2.9

SYMBOL No.		REC	PB
TRANSISTOR			
Q1	B	0.7	-0.1
	C	0.0	0.0
	E	0.0	0.0
Q2	B	0.7	0.0
	C	0.0	0.0
	E	0.0	0.0
Q4	B	0.0	0.0
	C	5.0	5.0
	E	0.0	0.0
Q5	B	0.0	2.4
	C	0.0	4.8
	E	0.0	1.7
Q8	B	0.0	2.3
	C	0.1	4.8
	E	0.0	1.7
Q9	B	0.0	2.3
	C	0.0	4.8
	E	0.0	1.7
Q10	B	0.0	1.7
	C	0.0	4.8
	E	0.0	1.1
Q11	B	-0.7	0.8
	C	0.0	0.0
	E	0.0	0.0
CONNECTOR			
CN1	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
CN2	1	0.0	0.0
	2	0.0	0.0
	3	5.0	5.0
	4	0.0	0.0
	5	0.0	2.6
CN3	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	4.8
	6	0.0	4.0
	7	9.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	-0.7	11.9
CN4	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0

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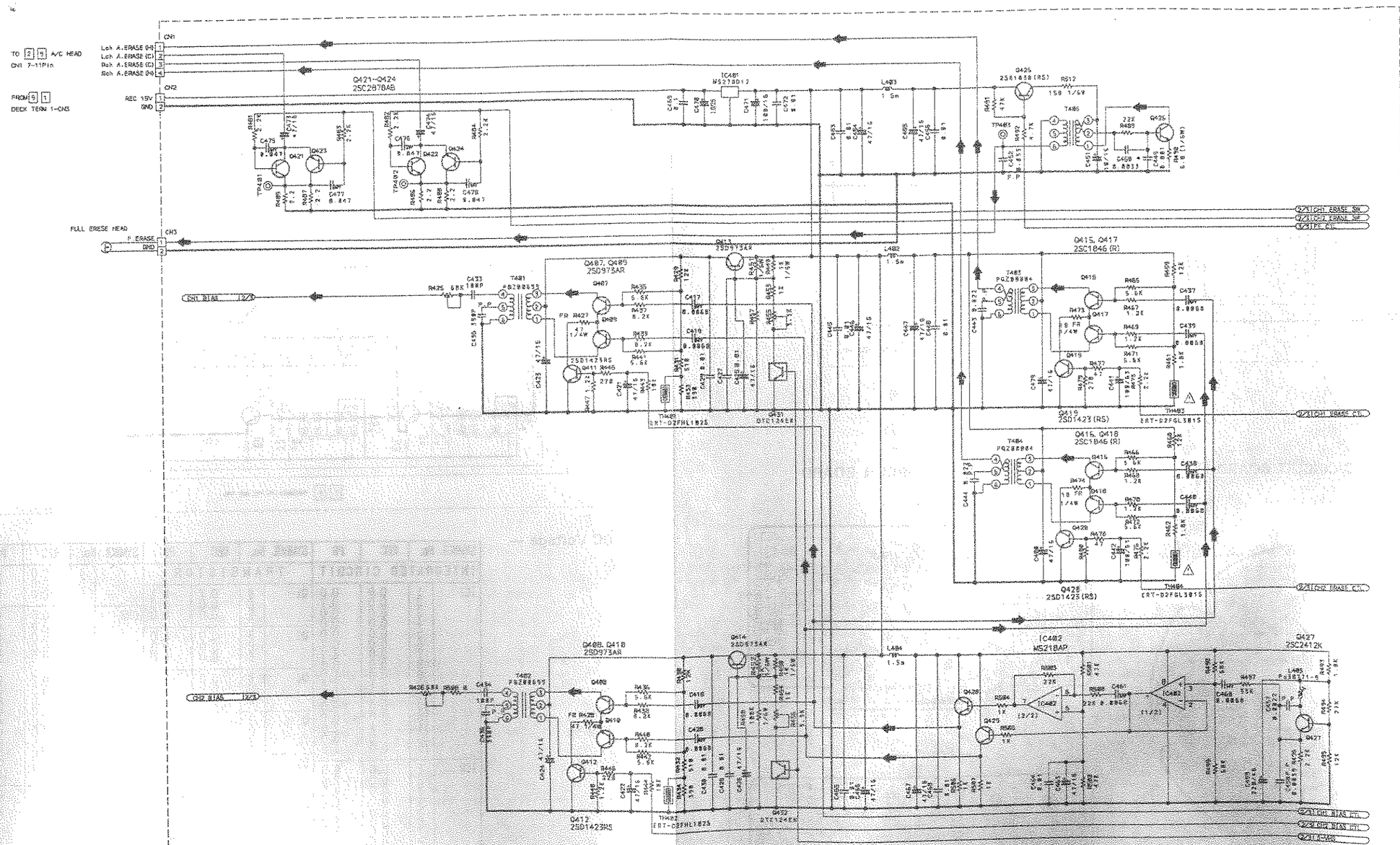
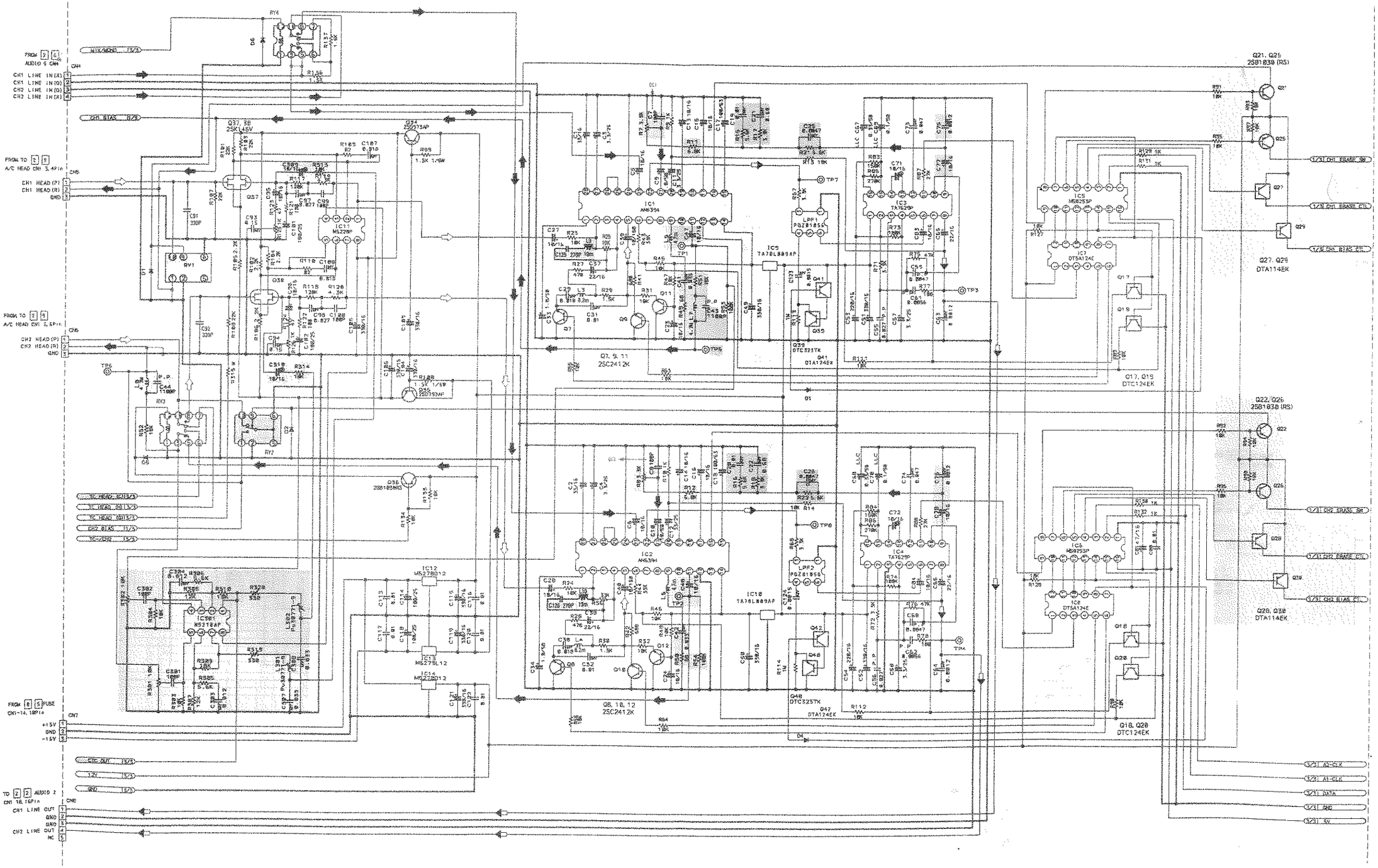
4.39 AUDIO-1 SCHEMATIC DIAGRAM

— DIAGRAM (1/3) —

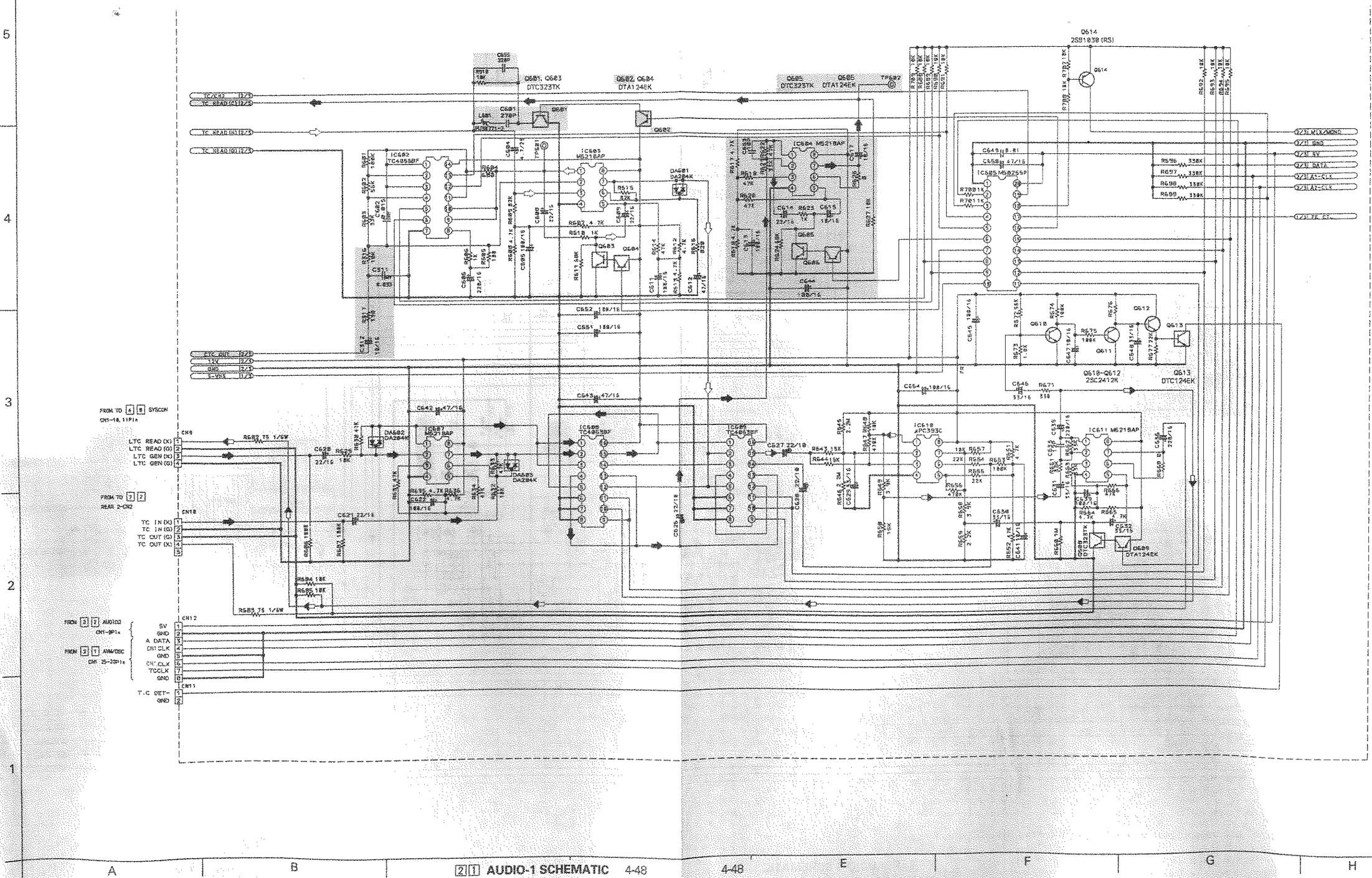
(The circuit shown in this page is not used in the BR-S522.)


CN1
CN2
CN3
Q421~Q424
2SC2878AB
IC481
M52780I2
L483
1.5m
Q425
2SB1838(RS)
R512
150 1/6W
T485
Q435
R491
4.7K
T484
R492
4.7K
R489
2.2K
R490
6.8 (1/4W)
C451
C458
C459
C460
C461
C462
C463
C464
C465
C466
C467
C468
C469
C470
C471
C472
C473
C474
C475
C476
C477
C478
R481
R482
R483
R484
R485
R486
R487
R488
TH481
TH482
TH483
TH484
TH485
TH486
FULL ERASE HEAD
R. ERASE
GND
CH1 BIAS 1/2
CH2 BIAS 1/2
Q407, Q409
2SD973AR
Q413
2SD973AK
L482
1.5m
Q415, Q417
2SC1846 (R)
T487
PQZ88884
Q419
2SD1423(RS)
Q415, Q418
2SC1846 (R)
T484
PQZ88884
Q428
2SD1423(RS)
Q408, Q410
2SD973AR
Q414
2SD973AK
L484
1.5m
IC482
M5218AP
Q427
2SC2412K
T482
PQZ88885
L485
PQ38T11-5
Q412
2SD1423RS
Q422
DTC124ES
R425 6.8K
C433 180P
R426 6.8K
R427 5.6K
R428 8.2K
R429 47 1.7W
R430 5.6K
R431 8.2K
R432 5.6K
R433 278
R434 5.6K
R435 5.6K
R436 8.2K
R437 5.6K
R438 278
R439 8.2K
R440 5.6K
R441 278
R442 5.6K
R443 191
R444 191
R445 278
R446 8.2K
R447 5.6K
R448 278
R449 191
R450 191
R451 47K
R452 1.2K
R453 1.8K
R454 2.2K
R455 1.8K
R456 5.6K
R457 1.2K
R458 1.8K
R459 12K
R460 5.6K
R461 1.2K
R462 1.8K
R463 2.2K
R464 5.6K
R465 5.6K
R466 5.6K
R467 1.2K
R468 1.8K
R469 1.2K
R470 1.8K
R471 5.6K
R472 4.7
R473 8 FR 1/4W
R474 18 FR 1/4W
R475 8 FR 1/4W
R476 4.7
R477 1.8K
R478 2.2K
R479 2.2K
R480 1.8K
R481 1.8K
R482 1.8K
R483 2.2K
R484 2.2K
R485 12K
R486 27K
R487 33K
R488 4.7K
R489 4.7K
R490 1K
R491 4.7K
R492 4.7K
R493 1K
R494 1K
R495 1K
R496 4.7K
R497 1.8K
R498 4.7K
R499 4.7K
R500 1K
R501 4.7K
R502 1K
R503 1K
R504 1K
R505 1K
R506 1K
R507 1K
R508 1K
R509 1K
R510 1K
R511 1K
R512 150 1/6W
R513 1K
R514 1K
R515 1K
R516 1K
R517 1K
R518 1K
R519 1K
R520 1K
R521 1K
R522 1K
R523 1K
R524 1K
R525 1K
R526 1K
R527 1K
R528 1K
R529 1K
R530 1K
R531 1K
R532 1K

— DIAGRAM (2/3) —



(Lines and descriptions printed in red are for the BR-S522 only.)


Q614
2SB1030 (R5)
Q601, Q603
DTC323TK
Q602, Q604
DTA124EK
Q605
DTC323TK
Q606
DTA124EK
TP602
IC602
TC4066BF
IC603
M5218AP
IC604
M5218AP
IC605
M5218AP
IC606
TC4053BF
IC607
M5218AP
IC608
TC4053BF
IC609
TC4053BF
IC610
μPC393C
IC611
M5218AP
DA601
DA204K
DA602
DA204K
DA603
DA204K
DA604
DA204K
Q610-Q612
2SC2412K
Q613
DTC124EK
Q614
2SB1030 (R5)
Q615
DTC323TK
Q616
DTA124EK
TC/CH2 (2/3)
TC READ (C) (2/3)
TC READ (G) (2/3)
TC READ (D) (2/3)
LTC OUT (2/3)
12V (2/3)
GND (2/3)
S-VHS (1/3)
FROM TO 4 5 SYSCON
CN1-18, 11Pin
CN9
LTC READ (X)
LTC READ (G)
LTC GEN (X)
LTC GEN (G)
FROM TO 1 2
REAR 2-CN2
CN10
TC IN (X)
TC IN (G)
TC OUT (G)
TC OUT (X)
FROM 3 2 AUDIO2
CN1-8Pin
FROM 2 1 AV4/DSC
CN1 25-20Pin
CN12
5V
GND
A DATA
CN1 CLK
GND
CN1 CLK
TCCLK
GND
CN11
T.C DET-
GND
Q/3I MIX/MONO
Q/3I GND
Q/3I 5V
Q/3I DATA
Q/3I A1-CLK
Q/3I A2-CLK
Q/3I FR CT

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— DC voltage(1/2) —

SYMBOL No.		REC	PB
INTEGRATED CIRCUIT			
IC1	1	4.5	4.5
	2	4.6	4.6
	3	0.0	0.0
	4	4.6	4.7
	5	4.7	4.7
	6	0.2	0.2
	7	4.7	4.7
	8	4.9	4.8
	9	4.7	4.7
	10	4.7	4.7
	11	4.6	4.8
	12	0.0	0.0
	13	4.8	4.8
	14	9.1	9.1
	15	0.1	0.1
	16	0.0	0.0
	17	0.0	0.0
	18	4.7	4.7
	19	4.7	4.8
	20	4.7	4.7
	21	4.7	4.7
	22	4.7	4.8
	23	4.7	4.7
	24	0.0	0.0
	25	4.7	4.7
	26	4.7	4.7
	27	4.7	4.7
	28	4.7	4.7
IC2	1	4.5	4.5
	2	4.6	4.6
	3	0.0	0.0
	4	4.6	4.7
	5	4.7	4.7
	6	4.7	4.7
	7	4.7	4.8
	8	4.8	4.7
	9	4.7	4.7
	10	4.7	4.8
	11	4.7	4.8
	12	0.0	0.0
	13	4.8	4.8
	14	9.1	9.1
	15	0.1	0.1
	16	0.0	0.0
	17	0.0	0.0
	18	4.7	4.7
	19	4.7	4.8
	20	4.7	4.7
	21	4.7	4.7
	22	4.7	4.8
	23	4.7	4.7
	24	0.0	0.0
	25	4.7	4.7
	26	4.7	4.7
	27	4.7	4.7
	28	4.7	4.7
IC3	1	11.5	11.5
	2	5.8	5.8
	3	0.0	0.0
	4	5.7	5.7
	5	7.7	7.7
	6	8.0	8.5
	7	5.5	5.5
	8	8.8	8.8
	9	5.5	5.5
	10	8.8	8.8
	11	5.5	5.5
	12	8.8	8.8
	13	5.5	5.5
	14	8.2	8.8
	15	5.6	5.6
	16	5.6	5.6

SYMBOL No.		REC	PB
IC4	1	11.5	11.5
	2	5.8	5.8
	3	0.0	0.0
	4	5.7	5.7
	5	7.7	7.7
	6	8.0	8.5
	7	5.5	5.5
	8	8.8	8.8
	9	5.5	5.5
	10	8.8	8.8
	11	5.5	5.5
	12	8.8	8.8
	13	5.5	5.5
	14	8.2	8.8
	15	5.6	5.6
	16	5.7	5.6
IC5	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	11.9
	5	0.0	11.9
	6	0.0	11.9
	7	0.0	11.9
	8	10.0	11.9
	9	10.0	11.9
	10	10.0	0.0
	11	11.9	11.9
	12	11.9	11.9
	13	11.9	11.9
	14	6.7	0.0
	15	0.0	9.1
	16	5.1	5.1
IC6	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	11.9
	5	0.0	11.9
	6	0.0	11.9
	7	0.0	11.9
	8	11.0	0.0
	9	11.9	11.9
	10	11.9	11.9
	11	11.9	11.9
	12	11.9	11.9
	13	11.9	11.9
	14	6.4	0.0
	15	9.1	9.1
	16	5.1	5.1
IC7	1	12.0	12.0
	2	12.0	12.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	12.0
	8	12.1	11.9
	9	11.9	11.9
	10	11.9	11.9
	11	11.9	11.9
	12	11.9	11.9
IC8	1	12.0	12.0
	2	12.0	12.0
	3	0.0	0.0
	4	0.0	0.0
	5	1.1	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	12.1	12.0
	9	11.9	11.9
	10	11.9	11.9
	11	11.9	11.9
	12	11.9	11.9
IC9	1	12.0	12.0
	2	0.0	0.0
	3	9.1	9.1
IC10	1	12.0	12.0
	2	0.0	0.0
	3	8.9	8.9

SYMBOL No.		REC	PB
IC11	1	0.0	0.0
	2	5.6	5.6
	3	5.3	5.3
	4	-11.5	-11.5
	5	5.3	5.3
	6	5.3	5.3
	7	0.0	0.2
	8	11.2	11.2
IC12	1	14.6	14.6
	2	0.0	0.0
	3	12.0	12.0
IC13	1	0.0	0.0
	2	-14.3	14.3
	3	-12.3	12.3
IC14	1	14.6	14.6
	2	0.0	0.0
	3	12.0	12.0
IC301	1	—	0.0
	2	—	0.0
	3	—	11.5
	4	—	0.0
	5	—	0.0
	6	—	0.0
	7	—	11.2
	8	—	
IC401	1	14.6	—
	2	0.0	—
	3	12.1	—
IC402	1	6.0	—
	2	6.0	—
	3	6.0	—
	4	0.6	—
	5	6.0	—
	6	6.0	—
	7	6.6	—
	8	12.0	—
IC602	1	—	6.0
	2	—	6.6
	3	—	6.0
	4	—	0.0
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	6.6
	9	—	6.6
	10	—	6.0
	11	—	11.4
	12	—	12.0
	13	—	
	14	—	
IC603	1	—	6.0
	2	—	6.6
	3	—	6.6
	4	—	0.0
	5	—	0.0
	6	—	0.0
	7	—	6.6
	8	—	12.0
IC604	1	—	8.8
	2	—	8.8
	3	—	8.8
	4	—	8.8
	5	—	8.8
	6	—	8.8
	7	—	11.5
	8	—	
IC605	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	11.9
	5	—	0.0
	6	—	0.0
	7	—	11.9
	8	—	11.9
	9	—	0.0
	10	—	6.6
	11	—	11.9
	12	—	11.9
	13	—	11.9
	14	—	11.9

SYMBOL No.		REC	PB
IC605	15	—	0.0
	16	—	11.9
	17	—	11.9
	18	—	11.9
	19	—	0.5
	20	—	
IC607	1	—	5.6
	2	—	8.8
	3	—	8.8
	4	—	8.8
	5	—	8.8
	6	—	8.8
	7	—	8.8
	8	—	11.
IC608	1	—	5.6
	2	—	8.8
	3	—	8.8
	4	—	8.8
	5	—	8.8
	6	—	8.8
	7	—	8.8
	8	—	8.8
	9	—	8.8
	10	—	8.8
	11	—	8.8
	12	—	8.8
	13	—	8.8
	14	—	8.8
	15	—	8.8
	16	—	12.
IC609	1	—	5.6
	2	—	8.8
	3	—	8.8
	4	—	8.8
	5	—	8.8
	6	—	8.8
	7	—	8.8
	8	—	8.8
	9	—	8.8
	10	—	8.8
	11	—	8.8
	12	—	8.8
	13	—	8.8
	14	—	8.8
	15	—	8.8
	16	—	12.
IC610	1	—	0.0
	2	—	4.6
	3	—	0.0
	4	—	4.7
	5	—	0.0
	6	—	11.
	7	—	
	8	—	
IC611	1	—	5.6
	2	—	8.8
	3	—	8.8
	4	—	8.8
	5	—	8.8
	6	—	8.8
	7	—	8.8
	8	—	11.

TRANSISTOR			
Q7	B C E	—	0.2 0.0 0.0
Q8	B C E	—	0.2 0.0 0.0
Q9	B C E	—	0.2 0.0 0.0
Q10	B C E	—	0.2 0.0 0.0
Q11	B C E	—	6.7 0.0 0.0

— DC voltage(2/2) —

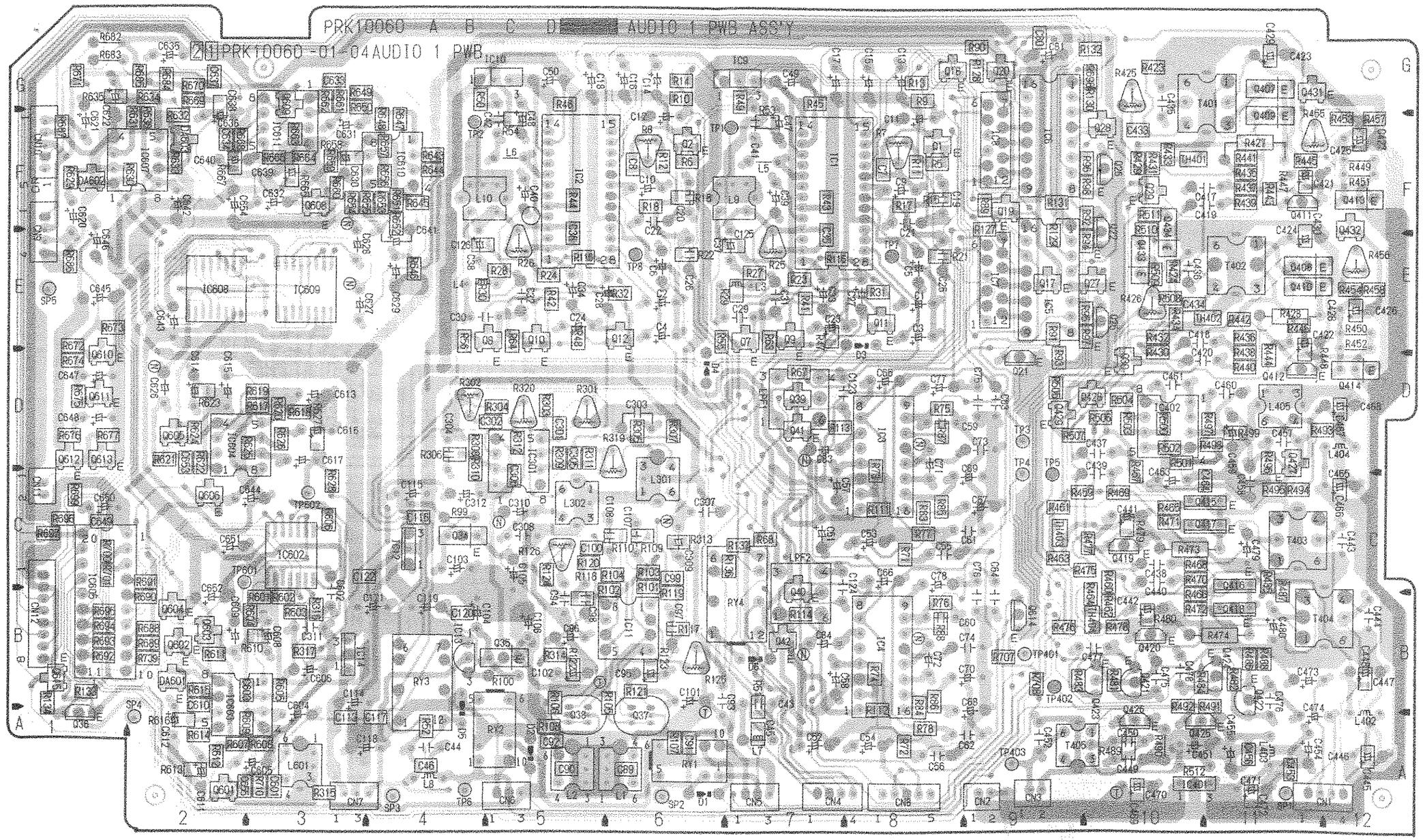
SYMBOL No.		REC	PB
Q12	B C E	— — —	0.7 0.0 0.0
Q17	B C E	— — —	0.0 5.5 0.0
Q18	B C E	— — —	0.0 5.5 0.0
Q19	B C E	— — —	0.0 9.0 0.0
Q20	B C E	— — —	0.0 9.0 0.0
Q21	B C E	— — —	11.9 0.0 12.0
Q22	B C E	— — —	11.9 0.0 12.0
Q23	B C E	— — —	— — —
Q24	B C E	— — —	— — —
Q25	B C E	— — —	11.9 0.0 12.0
Q26	B C E	— — —	11.9 0.2 12.0
Q27	B C E	— — —	11.9 0.0 12.0
Q28	B C E	— — —	11.9 0.0 12.0
Q29	B C E	— — —	11.9 0.0 12.0
Q30	B C E	— — —	11.9 0.0 12.0
Q34	B C E	— — —	11.9 12.0 11.2
Q35	B C E	— — —	-12.2 -12.3 -11.5
Q36	B C E	— — —	. . .
Q37	1 2 3 4 5 6	— — — — — —	5.3 5.0 0.3 3.3 5.0 0.3
Q38	1 2 3 4 5 6	— — — — — —	5.3 5.0 0.3 3.3 5.0 0.3

SYMBOL No.		REC	PB
Q39	B C E	— — —	0.2 0.0 0.0
Q40	B C E	— — —	0.2 0.0 0.0
Q41	B C E	— — —	11.5 0.0 11.5
Q42	B C E	— — —	11.5 0.0 11.5
Q43	B C E	— — —	— — —
Q407	B C E	0.4 8.3 0.3	— — —
Q408	B C E	0.5 8.7 0.4	— — —
Q409	B C E	0.4 8.3 0.3	— — —
Q410	B C E	0.5 8.7 0.4	— — —
Q411	B C E	0.7 0.1 0.0	— — —
Q412	B C E	0.7 0.1 0.0	— — —
Q413	B C E	— — —	— — —
Q414	B C E	9.3 12.1 8.7	— — —
Q415	B C E	0.6 11.3 0.9	— — —
Q416	B C E	0.7 11.4 1.0	— — —
Q417	B C E	0.6 11.3 0.9	— — —
Q418	B C E	0.6 11.4 1.0	— — —
Q419	B C E	0.8 0.1 0.0	— — —
Q420	B C E	0.8 0.1 0.0	— — —
Q421	B C E	0.8 0.0 0.0	— — —
Q422	B C E	0.8 0.0 0.0	— — —
Q423	B C E	0.8 0.0 0.0	— — —

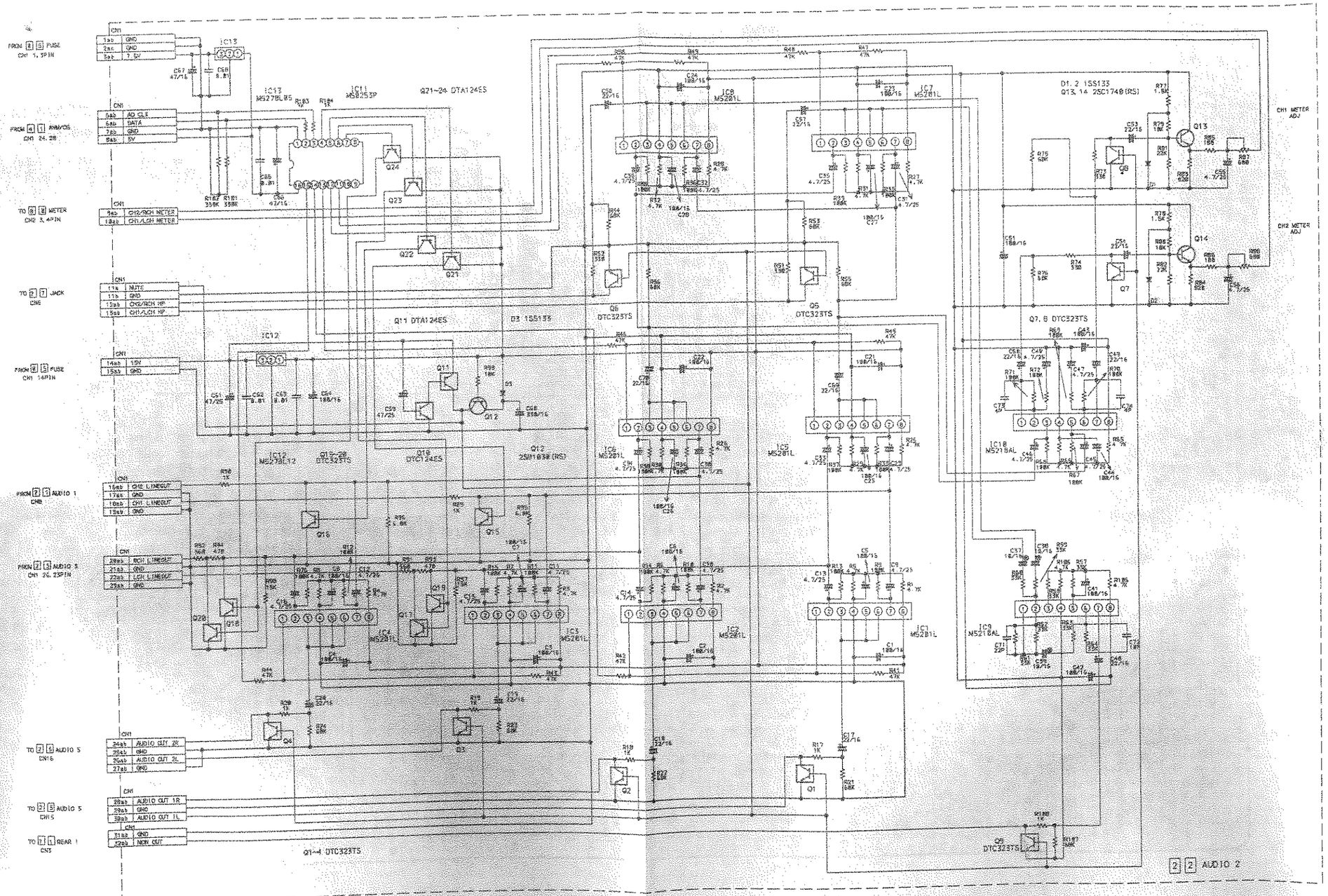
SYMBOL No.		REC	PB
Q424	B C E	0.8 0.0 0.0	— — —
Q425	B C E	11.2 11.9 11.9	— — —
Q426	B C E	-1.1 8.2 0.2	— — —
Q427	B C E	2.0 8.9 3.5	— — —
Q428	B C E	6.0 12.0 5.4	— — —
Q429	B C E	6.0 12.0 5.4	— — —
Q431	B C E	6.7 0.1 0.0	— — —
Q432	B C E	6.5 0.1 0.0	— — —
Q601	B C E	— — —	0.1 0.0 0.0
Q602	B C E	— — —	11.9 0.0 12.0
Q603	B C E	— — —	0.0 0.0 0.0
Q604	B C E	— — —	11.9 0.0 12.0
Q605	B C E	— — —	11.5 0.0 0.0
Q606	B C E	— — —	0.0 11.5 11.5
Q607	B C E	— — —	— — —
Q608	B C E	— — —	-0.2 0.0 0.0
Q609	B C E	— — —	11.5 -0.2 11.6
Q610	B C E	— — —	-1.1 0.0 0.0
Q611	B C E	— — —	0.0 11.8 0.0
Q612	B C E	— — —	11.8 11.9 11.2
Q613	B C E	— — —	11.2 0.0 0.0
Q614	B C E	— — —	12.0 0.0 12.0

SYMBOL No.		REC	PB
Q615	B C E	— — —	0.0 12.0 12.0
CONNECTOR			
CN1	1 2 3 4	0.0 0.0 0.0 0.0	— — — —
CN2	1 2	14.9 0.0	— —
CN3	1 2	0.0 0.0	—
CN4	1 2 3 4	— — — —	4.7 0.0 0.5 4.5
CN5	1 2 3	— — —	0.0 0.0 0.0
CN6	1 2 3	— — —	0.0 0.0 0.0
CN7	1 2 3	— — —	15.0 0.0 -14.6
CN8	1 2 3 4 5	— — — — —	0.0 0.0 0.0 0.0 0.0
CN9	1 2 3 4	— — — —	0.0 0.0 0.0 0.0
CN10	1 2 3 4 5	— — — — —	0.0 0.0 0.0 0.0 0.0
CN11	1 2	— —	5.0 0.0
CN12	1 2 3 4 5 6 7 8	— — — — — — — —	5.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0

4.40 AUDIO-1 CIRCUIT BOARD



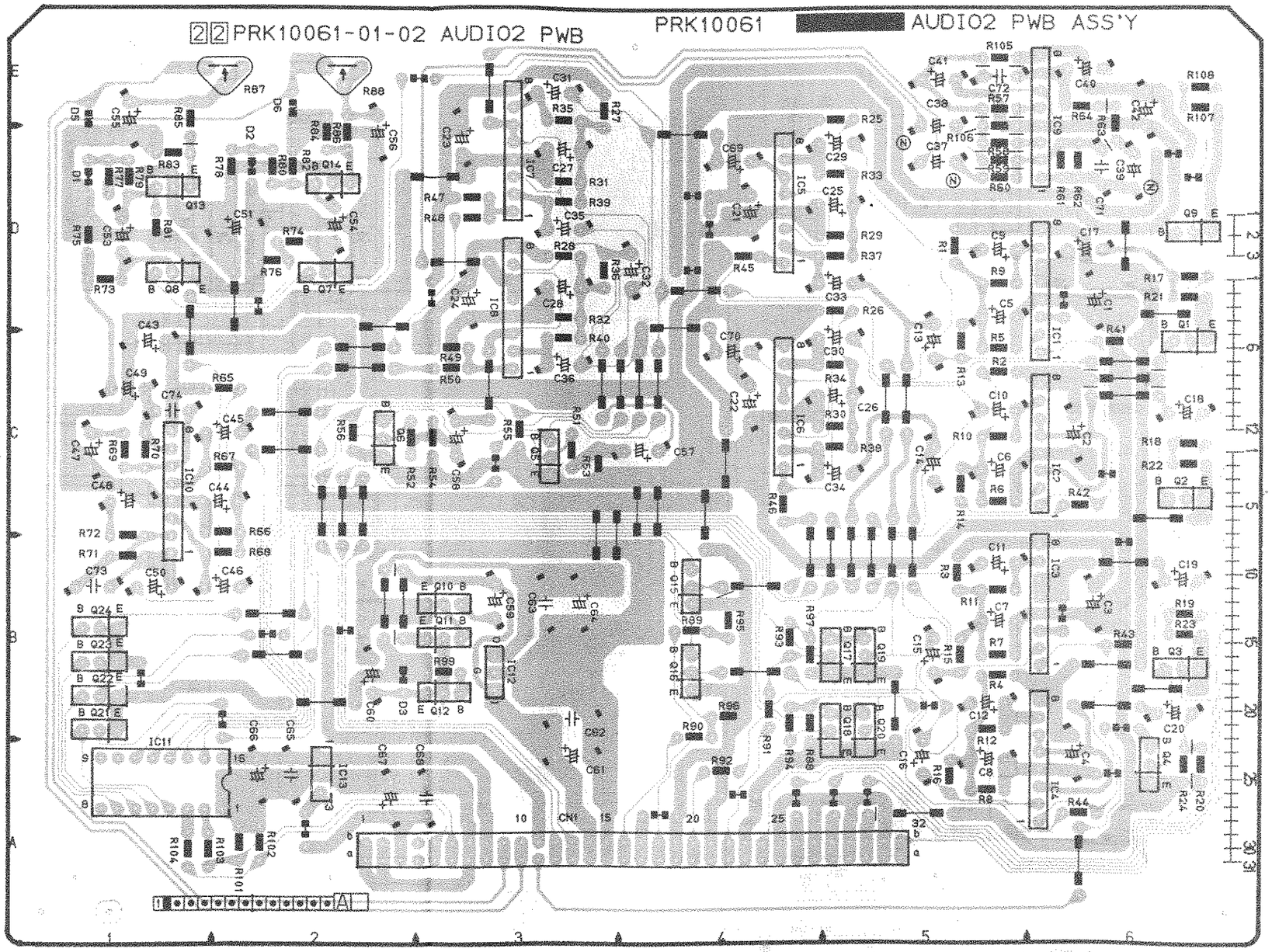
4.41 AUDIO-2 SCHEMATIC DIAGRAM



4-52

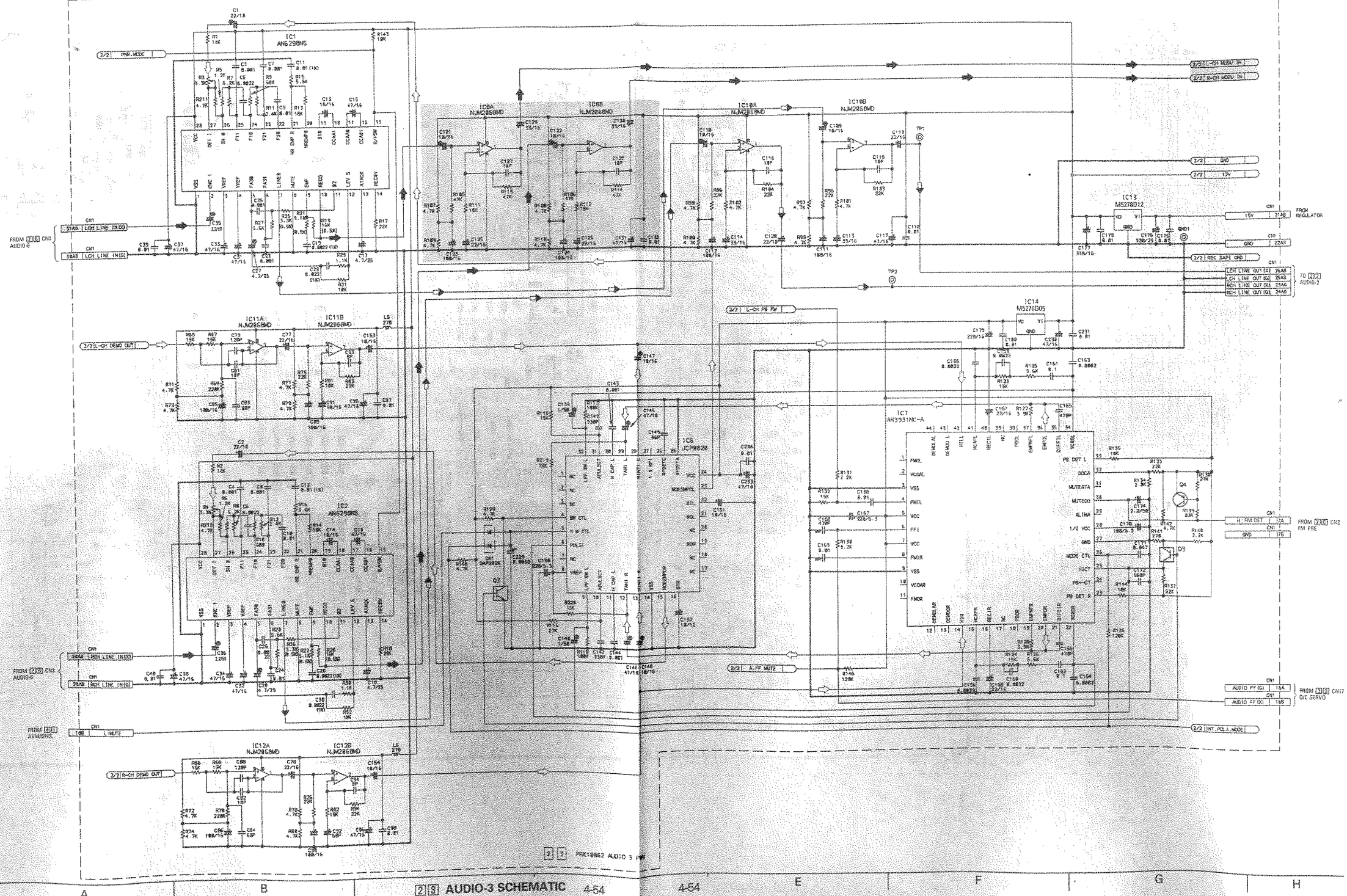
— DC Voltage —

SYMBOL No.		REC	PB
INTEGRATED CIRCUIT			
IC1	1	—	10.3
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.0
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC2	1	—	10.3
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.0
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC3	1	—	12.0
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.0
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC4	1	—	12.0
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.1
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC5	1	—	10.3
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.1
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC6	1	—	10.3
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.1
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC7	1	—	12.0
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.1
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC8	1	—	9.5
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.0
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC9	1	—	9.5
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.0
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC10	1	—	9.0
	2	—	6.0
	3	—	6.0
	4	—	6.0
	5	—	6.0
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC11	1	—	0.0
	2	—	0.1
	3	—	6.0
	4	—	12.0
	5	—	0.1
	6	—	6.0
	7	—	11.9
	8	—	5.1
IC12	1	—	15.2
	2	—	12.0
IC13	1	—	7.4
	2	—	0.0
	3	—	5.1
TRANSISTOR			
Q1	B	—	-0.3
	C	—	0.0
	E	—	0.0
Q2	B	—	-0.3
	C	—	0.0
	E	—	0.0
Q3	B	—	-0.3
	C	—	0.0
	E	—	0.0
Q4	B	—	-0.3
	C	—	0.0
	E	—	0.0
Q5	B	—	-0.4
	C	—	0.0
	E	—	0.0
Q6	B	—	-0.4
	C	—	0.0
	E	—	0.0
Q7	B	—	-0.4
	C	—	0.0
	E	—	0.0
Q8	B	—	-0.4
	C	—	0.0
	E	—	0.0
Q9	B	—	-0.4
	C	—	0.0
	E	—	0.0
Q10	B	—	0.0
	C	—	15.1
	E	—	0.0
Q11	B	—	15.1
	C	—	0.4
	E	—	15.2
Q12	B	—	12.0
	C	—	0.4
	E	—	11.9
Q13	B	—	0.5
	C	—	12.5
	E	—	0.0
Q14	B	—	0.5
	C	—	12.5
	E	—	0.0
Q15	B	—	0.0
	C	—	0.0
	E	—	0.0
Q16	B	—	12.0
	C	—	0.0
	E	—	0.0
Q17	B	—	12.0
	C	—	0.0
	E	—	0.0
Q18	B	—	12.0
	C	—	0.0
	E	—	0.0
Q19	B	—	12.0
	C	—	0.0
	E	—	0.0
Q20	B	—	11.9
	C	—	0.0
	E	—	0.0
Q21	B	—	12.0
	C	—	0.2
	E	—	12.3
Q22	B	—	0.1
	C	—	12.0
	E	—	12.0
Q23	B	—	0.1
	C	—	12.0
	E	—	12.0
Q24	B	—	0.1
	C	—	12.0
	E	—	12.0
CONNECTOR			
CN1	1AB	—	0.0
	2AB	—	0.0
	3AB	—	7.4
	5AB	—	0.0
	6AB	—	0.1
	7AB	—	0.0
	8AB	—	5.1
	9AB	—	0.0
	10AB	—	0.2
	11AB	—	-0.3
	12AB	—	0.0
	13AB	—	0.0
	14AB	—	15.2
	15AB	—	0.0
	16AB	—	0.0
	17AB	—	0.0
	18AB	—	0.0
	19AB	—	0.0
	20AB	—	0.0
	21AB	—	0.0
	22AB	—	0.0
	23AB	—	0.0
	24AB	—	0.0
	25AB	—	0.0
	26AB	—	0.0
	27AB	—	0.0
	28AB	—	0.0
	29AB	—	0.0
	30AB	—	0.0
	31AB	—	0.0
	32AB	—	0.0



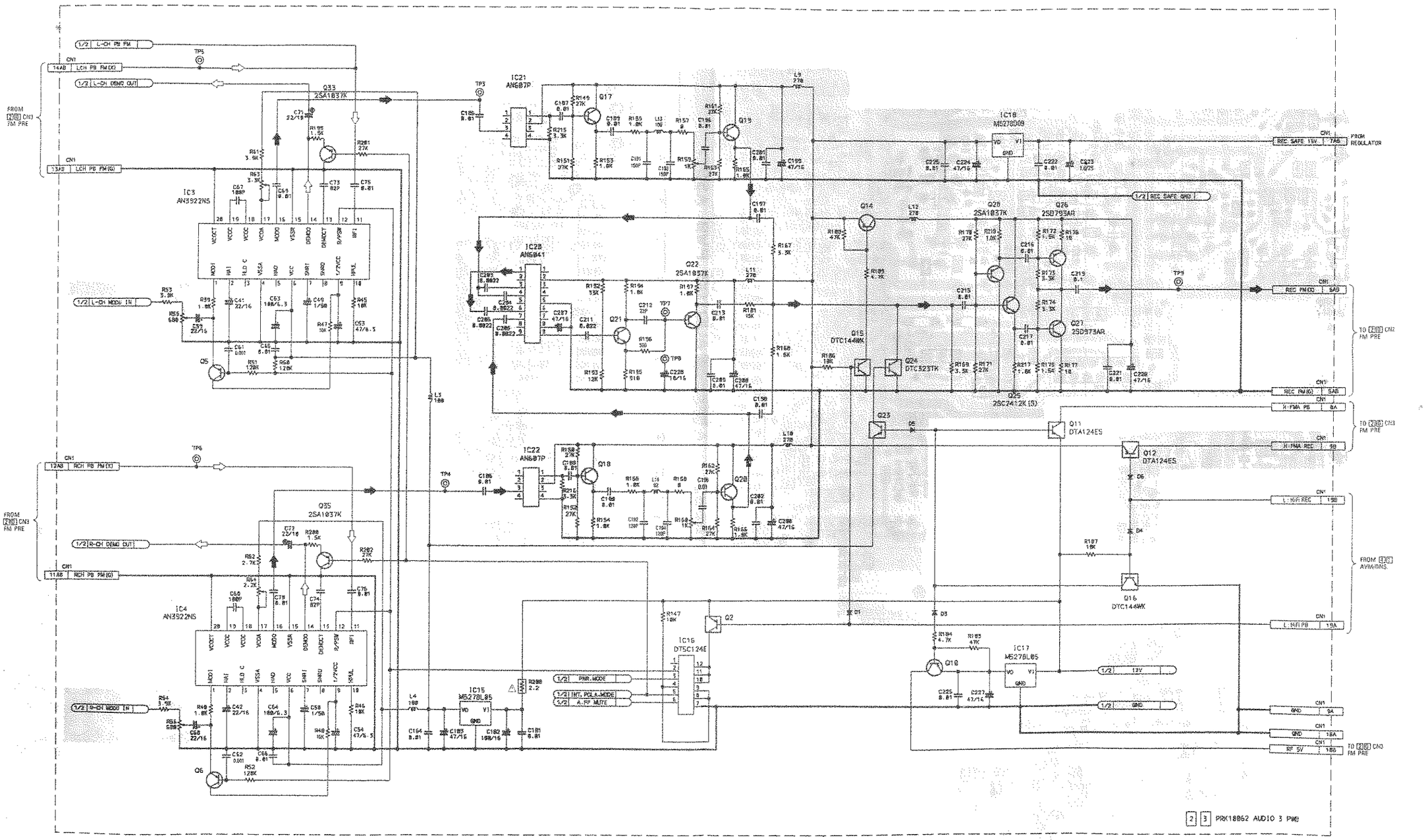
4.43 AUDIO-3 SCHEMATIC DIAGRAM

— DIAGRAM (1/2) —



4-54

— DIAGRAM (2/2) —



4-55 2 3 AUDIO-3 SCHEMATIC

— DC voltage(1/2) —

SYMBOL	No.	REC	PB
INTEGRATED CIRCUIT			
IC1	1	—	0.0
	2	—	6.1
	3	—	6.1
	4	—	6.1
	5	—	6.1
	6	—	6.1
	7	—	6.1
	8	—	0.0
	9	—	6.1
	10	—	6.1
	11	—	6.1
	12	—	0.4
	13	—	0.4
	14	—	0.1
	15	—	0.0
	16	—	6.1
	17	—	6.1
	18	—	6.1
	19	—	6.1
	20	—	6.1
	21	—	6.1
	22	—	6.1
	23	—	6.1
	24	—	6.1
	25	—	6.1
	26	—	6.1
	27	—	6.1
	28	—	12.1
IC2	1	—	0.0
	2	—	6.1
	3	—	6.1
	4	—	6.1
	5	—	6.1
	6	—	6.1
	7	—	6.1
	8	—	0.0
	9	—	6.1
	10	—	6.1
	11	—	6.1
	12	—	6.9
	13	—	0.4
	14	—	0.1
	15	—	0.0
	16	—	6.1
	17	—	6.0
	18	—	6.1
	19	—	6.1
	20	—	6.1
	21	—	6.1
	22	—	6.1
	23	—	6.1
	24	—	6.1
	25	—	6.1
	26	—	6.1
	27	—	6.1
	28	—	12.1
IC3	1	—	2.6
	2	—	2.6
	3	—	2.6
	4	—	0.0
	5	—	2.5
	6	—	2.6
	7	—	2.6
	8	—	2.6
	9	—	2.6
	10	—	0.0
	11	—	3.0
	12	—	3.0
	13	—	2.6
	14	—	2.5
	15	—	2.6
	16	—	2.6
	17	—	3.9
	18	—	4.4
	19	—	4.4
	20	—	0.0
IC4	1	—	2.6
	2	—	2.3
	3	—	2.6
	4	—	3.5
	5	—	2.6
	6	—	0.0
	7	—	2.5
	8	—	2.6
	9	—	2.6

SYMBOL	No.	REC	PB
IC4	10	—	0.0
	11	—	3.1
	12	—	0.3
	13	—	3.2
	14	—	2.5
	15	—	0.0
	16	—	3.9
	17	—	4.0
	18	—	4.4
	19	—	4.4
	20	—	0.0
IC7	1	—	3.7
	2	—	3.2
	3	—	0.0
	4	—	2.6
	5	—	5.1
	6	—	5.1
	7	—	2.6
	8	—	0.0
	9	—	2.9
	10	—	7.7
	11	—	3.3
	12	—	4.3
	13	—	5.5
	14	—	2.6
	15	—	2.6
	16	—	2.6
	17	—	0.0
	18	—	2.6
	19	—	2.6
	20	—	2.6
	21	—	0.0
	22	—	4.3
	23	—	0.0
	24	—	0.0
	25	—	5.0
	26	—	0.0
	27	—	0.0
	28	—	6.2
	29	—	2.6
	30	—	0.0
	31	—	1.5
	32	—	5.3
	33	—	2.6
	34	—	2.6
	35	—	2.6
	36	—	2.6
	37	—	2.6
	38	—	2.6
	39	—	0.0
	40	—	2.6
	41	—	2.6
	42	—	2.6
	43	—	2.6
	44	—	4.3
IC8	1	—	6.1
	2	—	6.1
	3	—	6.0
	4	—	0.0
	5	—	6.1
	6	—	6.1
	7	—	6.1
	8	—	12.1
IC10	1	—	6.0
	2	—	6.1
	3	—	6.0
	4	—	0.0
	5	—	6.1
	6	—	6.1
	7	—	6.1
	8	—	12.1
IC11	1	—	6.1
	2	—	6.1
	3	—	6.1
	4	—	0.0
	5	—	6.6
	6	—	6.6
	7	—	6.6
	8	—	12.0

SYMBOL	No.	REC	PB
IC12	1	—	6.1
	2	—	6.1
	3	—	6.0
	4	—	0.0
	5	—	6.0
	6	—	6.0
	7	—	6.0
	8	—	12.0
IC13	1	15.0	15.0
	2	0.0	0.0
	3	12.1	12.1
IC14	1	5.1	5.1
	2	0.0	0.0
	3	11.9	11.9
IC15	1	5.1	5.1
	2	0.0	0.0
	3	12.0	12.0
IC16	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
	5	—	5.1
	6	—	5.1
	7	—	0.0
	8	—	0.0
	9	—	0.0
	10	—	12.0
	11	—	0.0
	12	—	0.0
IC17	1	12.1	12.1
	2	0.0	0.0
	3	5.1	5.1
IC18	1	14.9	0.0
	2	0.0	0.0
	3	8.3	0.0
IC20	1	5.9	0.0
	2	8.1	0.0
	3	2.5	0.0
	4	6.0	0.0
	5	0.5	0.0
	6	6.2	0.0
	7	2.6	0.0
	8	5.7	0.0
	9	5.7	0.0
IC21	1	4.7	0.0
	2	8.2	0.0
	3	2.2	0.0
	4	0.0	0.0
IC22	1	4.7	0.0
	3	8.2	0.0
	3	2.2	0.0
	4	0.0	0.0

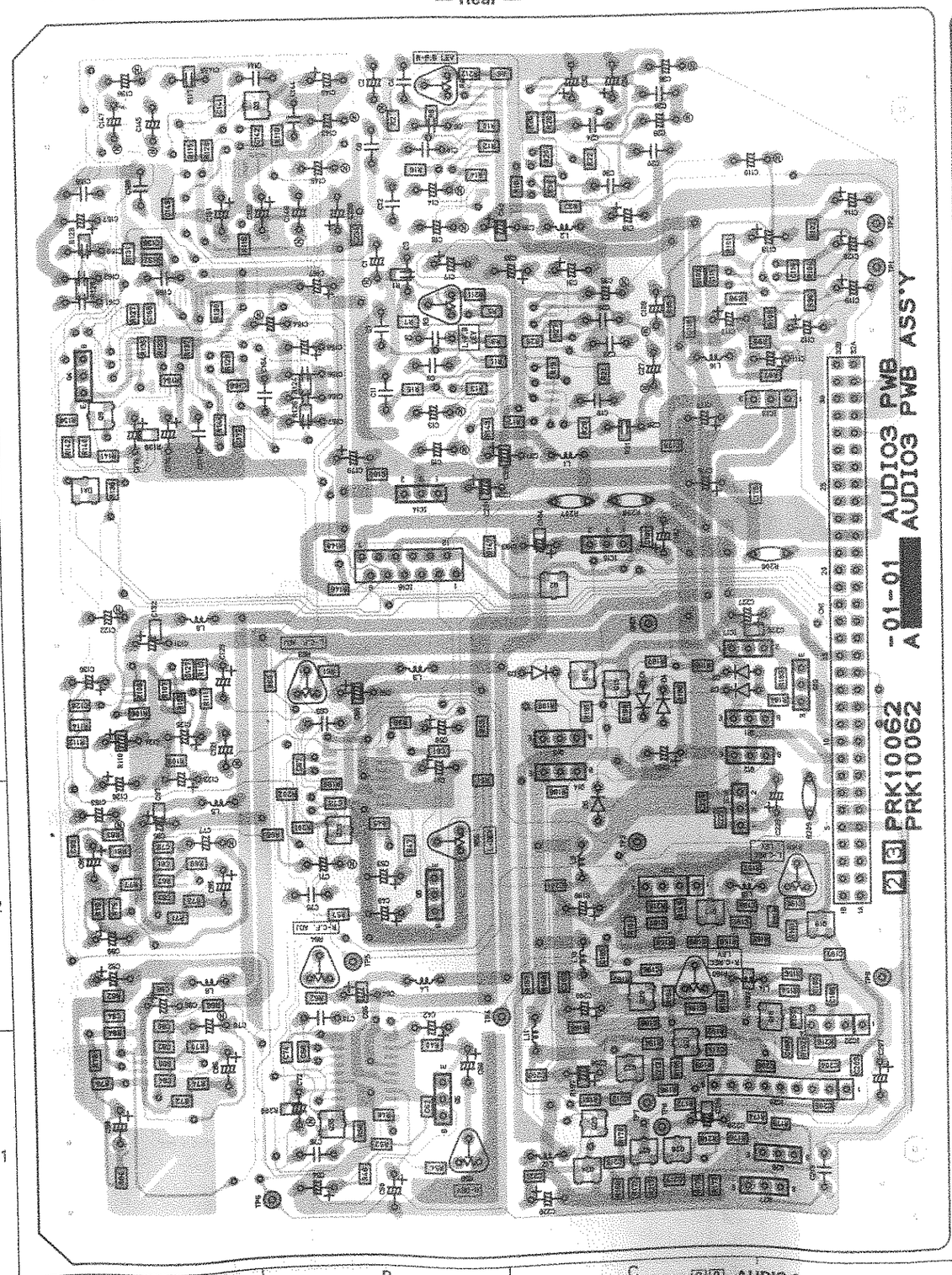
SYMBOL	No.	REC	PB
TRANSISTOR			
Q2	B	12.0	0.1
	C	0.0	12.1
	E	12.1	12.1
Q3	B	—	5.1
	C	—	0.0
	E	—	0.0
Q4	B	—	4.5
	C	—	5.1
	E	—	5.1
Q5	B	—	2.1
	C	—	2.6
	E	—	2.6
Q6	B	—	2.1
	C	—	2.6
	E	—	2.6
Q9	B	—	5.1
	C	—	0.5
	E	—	0.5
Q10	B	5.1	4.4
	C	0.0	5.0
	E	5.1	5.1
Q11	B	12.0	0.0
	C	0.3	12.0
	E	12.1	12.1
Q12	B	0.6	0.0
	C	8.2	0.0
	E	8.2	0.0
Q14	B	7.5	0.0
	C	8.2	0.0
	E	8.2	0.0
Q15	B	6.8	0.0
	C	0.0	0.0
	E	0.0	0.0
Q16	B	0.7	9.9
	C	12.0	0.0
	E	0.0	0.0
Q17	B	3.9	0.0
	C	8.3	0.0
	E	3.3	0.0
Q18	B	3.9	0.0
	C	8.3	0.0
	E	3.3	0.0
Q19	B	3.9	0.0
	C	8.3	0.0
	E	3.3	0.0
Q20	B	3.9	0.0
	C	8.3	0.0
	E	3.2	0.0
Q21	B	2.1	0.0
	C	6.1	0.0
	E	1.5	0.0
Q22	B	1.5	0.0
	C	0.2	0.0
	E	2.2	0.0
Q23	B	5.1	0.6
	C	0.0	5.1
	E	5.1	5.1
Q24	B	0.0	5.1
	C	0.0	0.0
	E	0.0	0.0
Q25	B	4.1	0.0
	C	7.9	0.0
	E	3.5	0.0
Q26	B	6.8	0.0
	C	3.5	0.0
	E	7.5	0.0

— DC voltage(2/2) —

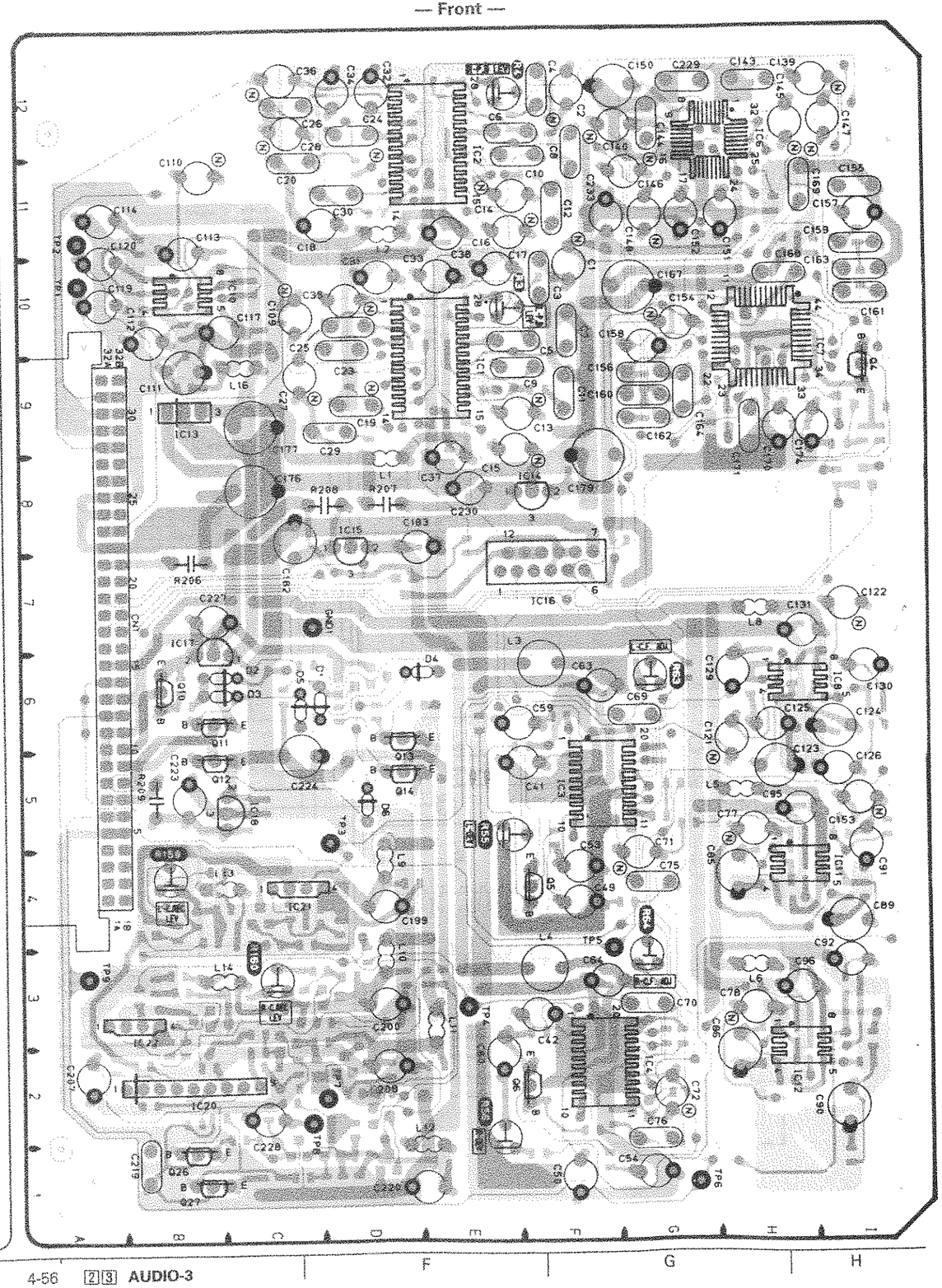
SYMBOL	No.	REC	PB
Q27	B	1.1	0.0
	C	3.8	0.0
	E	0.4	0.0
Q28	B	4.1	0.0
	C	0.0	0.0
	E	4.7	0.0
Q33	B	—	5.1
	C	—	0.0
	E	—	2.5
Q35	B	—	5.1
	C	—	0.0
	E	—	2.5
CONNECTOR			
CN1	31AB	—	6.1
	30AB	—	0.0
	28AB	—	6.1
	29AB	—	0.0
	18B	—	0.1
	21AB	—	15.2
	22AB	—	0.0
	26AB	—	0.0
	25AB	—	0.0
	23AB	—	0.0
	24AB	—	0.0
	7A	—	0.0
	7B	—	0.0
	15A	—	0.0
	15B	—	0.0
	14AB	—	0.0
	13AB	—	0.0
	12AB	—	0.1
	11AB	—	0.0
	7AB	—	0.1
	6AB	—	0.0
	5AB	—	0.0
	8A	—	12.0
	9B	—	-0.2
	19B	—	9.7
	19A	—	0.1
	9A	—	0.0
	10A	—	0.0
	10B	—	5.0

4.44 AUDIO-3 CIRCUIT BOARD

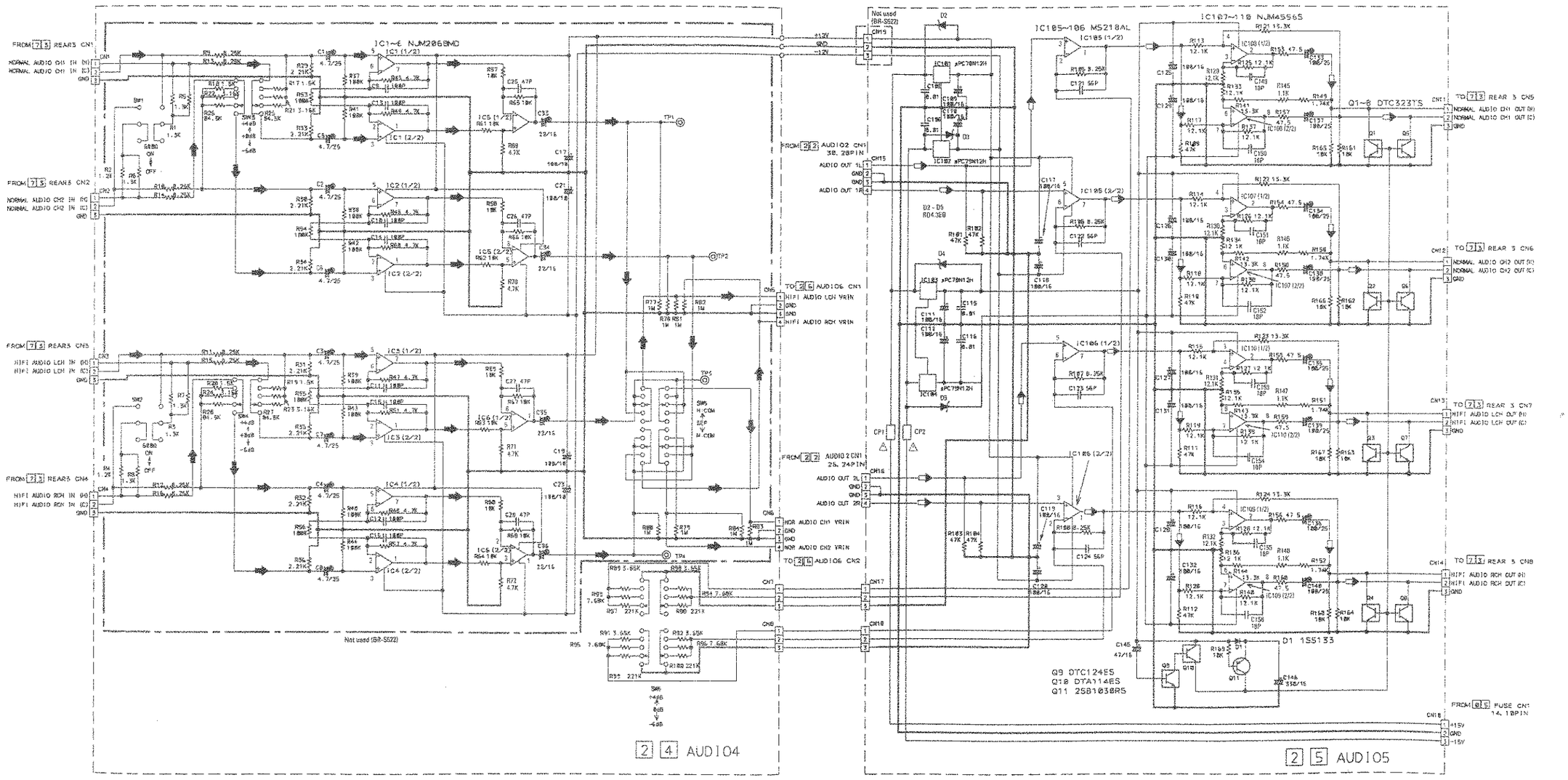
— Rear —



— Front —



4.45 XLR (AUDIO-4, -5) SCHEMATIC DIAGRAM



4-57

— DC voltage —

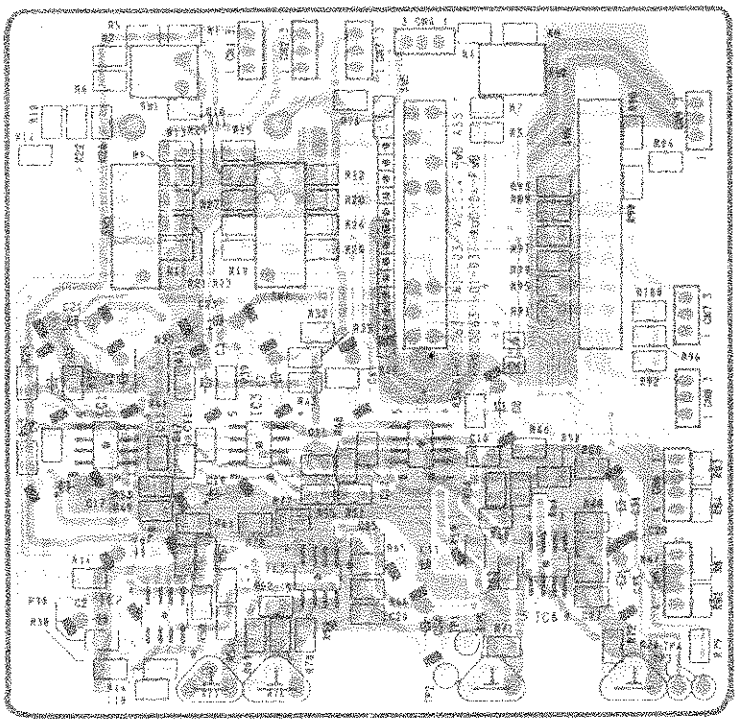
SYMBOL No.		REC	PB
INTEGRATED CIRCUIT			
IC1	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	-12.6
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	12.1
IC2	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	-12.6
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	12.1
IC3	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	-12.6
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	12.1
IC4	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	-12.6
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	12.1
IC5	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	-12.6
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	12.1
IC6	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	-12.6
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	12.1
IC101	1	15.1	15.1
	2	0.0	0.0
	3	12.1	12.1
IC102	1	0.0	0.0
	2	-14.9	-14.9
	3	-12.2	-12.2
IC103	1	—	—
	2	—	—
	3	—	—
IC104	1	0.0	0.0
	2	-14.9	-14.9
	3	-12.1	-12.1
IC105	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	-12.6
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	12.1
IC106	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	-12.6
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	12.1

SYMBOL No.		REC	PB
IC107	1	—	12.1
	2	—	0.0
	3	—	0.0
	4	—	0.0
	5	—	-12.6
	6	—	0.0
	7	—	0.0
	8	—	0.0
	9	—	12.1
IC108	1	—	12.1
	2	—	0.0
	3	—	0.0
	4	—	0.0
	5	—	-12.6
	6	—	0.0
	7	—	0.0
	8	—	0.0
	9	—	12.1
IC109	1	—	12.1
	2	—	0.0
	3	—	0.0
	4	—	0.0
	5	—	-12.6
	6	—	0.0
	7	—	0.0
	8	—	0.0
	9	—	12.1
IC110	1	—	12.1
	2	—	0.0
	3	—	0.0
	4	—	0.0
	5	—	-12.6
	6	—	0.0
	7	—	0.0
	8	—	0.0
	9	—	12.1
TRANSISTOR			
Q1	B	—	0.0
	C	—	0.0
	E	—	0.0
Q2	B	—	0.0
	C	—	0.0
	E	—	0.0
Q3	B	—	0.0
	C	—	0.0
	E	—	0.0
Q4	B	—	0.0
	C	—	0.0
	E	—	0.0
Q5	B	—	0.0
	C	—	0.0
	E	—	0.0
Q6	B	—	0.0
	C	—	0.0
	E	—	0.0
Q7	B	—	0.0
	C	—	0.0
	E	—	0.0
Q8	B	—	0.0
	C	—	0.0
	E	—	0.0
Q9	B	—	0.0
	C	—	12.0
	E	—	0.0
Q10	B	—	12.0
	C	—	0.0
	E	—	12.1
Q11	B	—	12.0
	C	—	0.0
	E	—	11.3

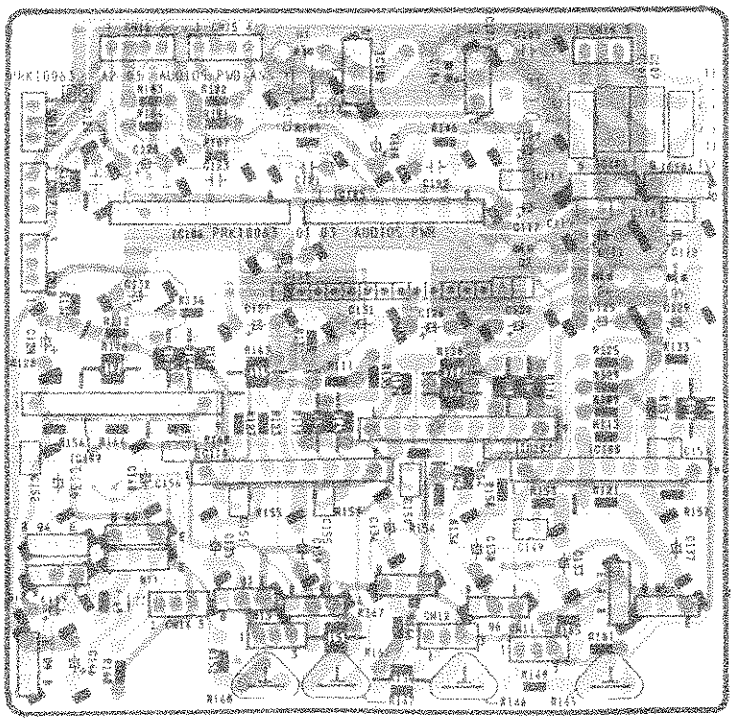
SYMBOL No.		REC	PB
CONNECTOR			
CN1	1	—	0.0
	2	—	0.0
	3	—	0.0
CN2	1	—	0.0
	2	—	0.0
	3	—	0.0
CN3	1	—	0.0
	2	—	0.0
	3	—	0.0
CN4	1	—	0.0
	2	—	0.0
	3	—	0.0
CN5	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
CN6	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
CN7	1	—	0.0
	2	—	0.0
	3	—	0.0
CN8	1	—	0.0
	2	—	0.0
	3	—	0.0
CN9	1	—	12.1
	2	—	-0.2
	3	—	-12.2
CN10	1	—	15.2
	2	—	0.0
	3	—	-15.1
CN11	1	—	0.0
	2	—	0.0
	3	—	0.0
CN12	1	—	0.0
	2	—	0.0
	3	—	0.0
CN13	1	—	0.0
	2	—	0.0
	3	—	0.0
CN14	1	—	0.0
	2	—	0.0
	3	—	0.0
CN15	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
CN16	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
CN17	1	—	0.0
	2	—	0.0
	3	—	0.0
CN18	1	—	0.0
	2	—	0.0
	3	—	0.0
CN19	1	—	12.1
	2	—	-0.2
	3	—	-12.2

4.46 XLR (AUDIO-4, -5) CIRCUIT BOARD

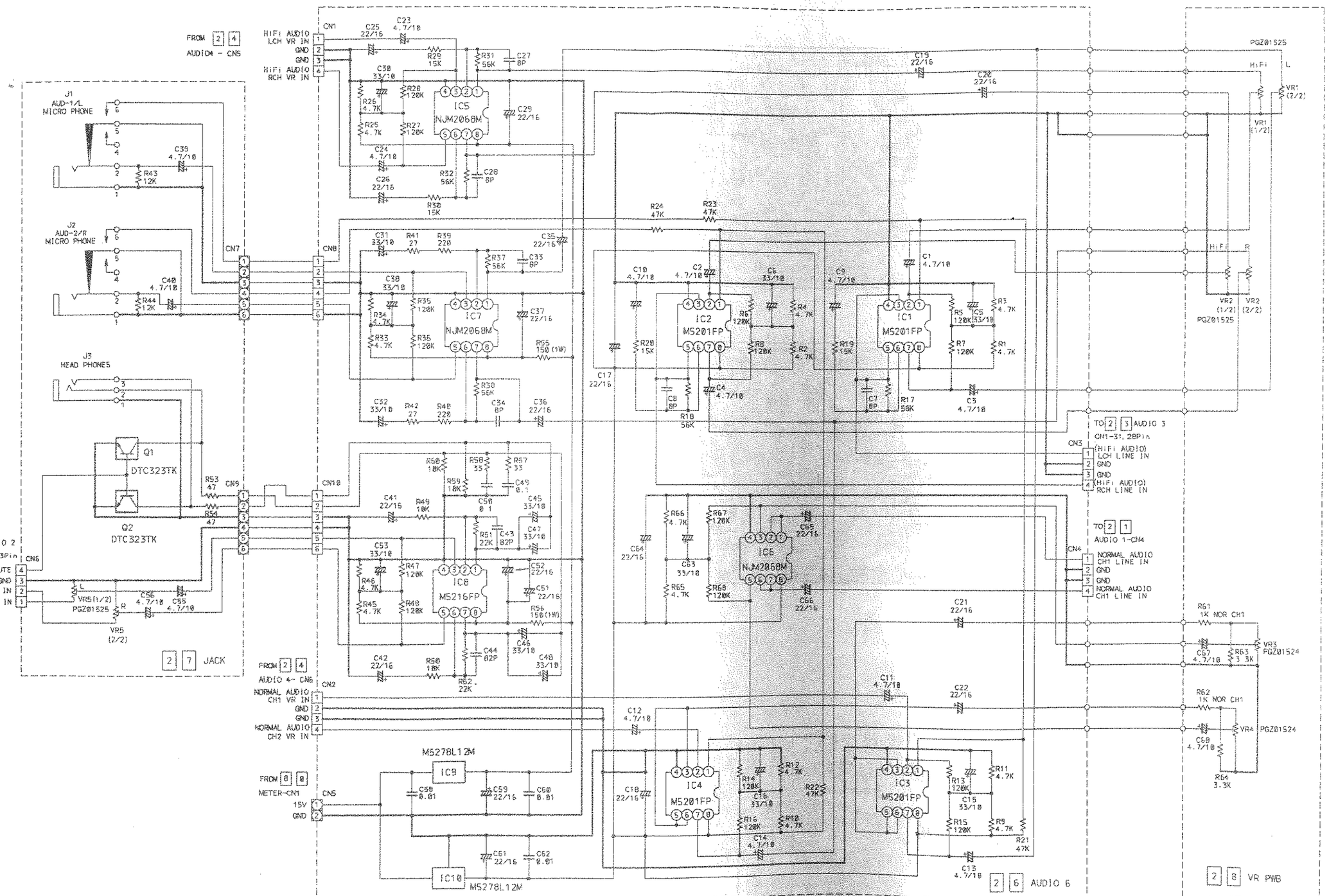
— AUDIO 4 —



— AUDIO 5 —



4.47 FRONT (AUDIO-6, JACK, VR) SCHEMATIC DIAGRAM (BR-S822/BR-S622)

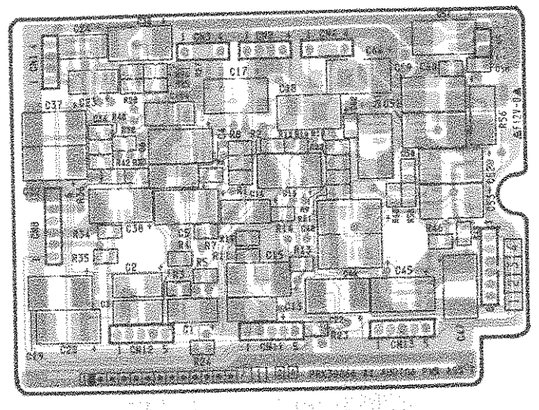


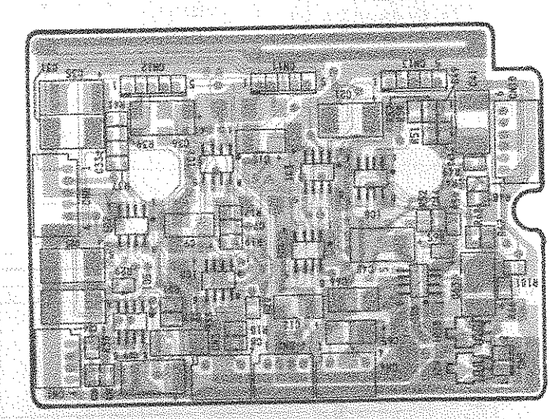
4.48 FRONT (AUDIO-6, JACK, VR) & A/C HEAD CIRCUIT BOARD

— DC voltage —

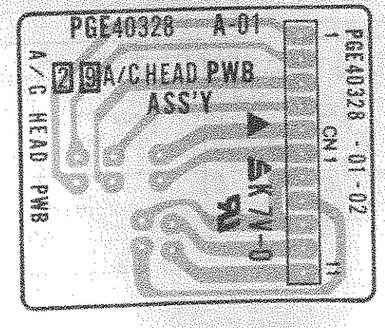
SYMBOL No.		REC	PB
CONNECTOR			
CN1	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
CN2	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
CN3	1	—	5.9
	2	—	0.0
	3	—	0.0
	4	—	5.8
CN4	1	—	4.5
	2	—	0.0
	3	—	0.0
	4	—	4.4
CN5	1	—	15.0
	2	—	0.0
CN8	1	—	11.5
	2	—	5.4
	3	—	0.0
	4	—	11.5
	5	—	5.4
	6	—	0.0
CN11	1	—	0.2
	2	—	0.0
	3	—	0.1
	4	—	0.0
	5	—	0.0
CN12	1	—	0.1
	2	—	0.0
	3	—	0.0
	4	—	0.0
	5	—	0.0
CN13	1	—	5.8
	2	—	0.0
	3	—	5.8
	4	—	0.0

— AUDIO-6 —

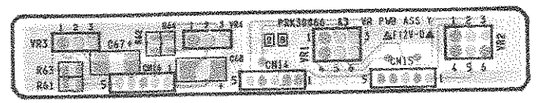


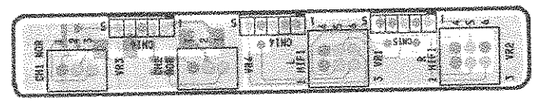


— A/C HEAD —

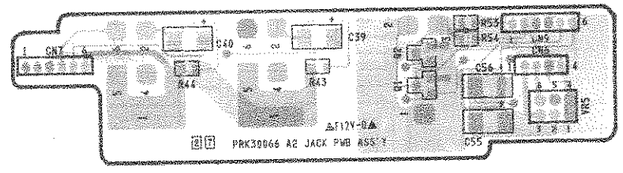


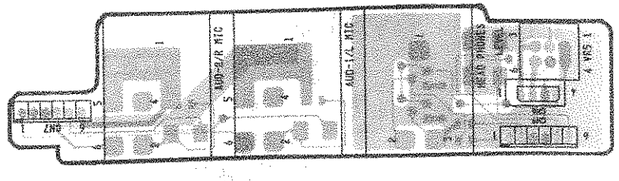
— VR —





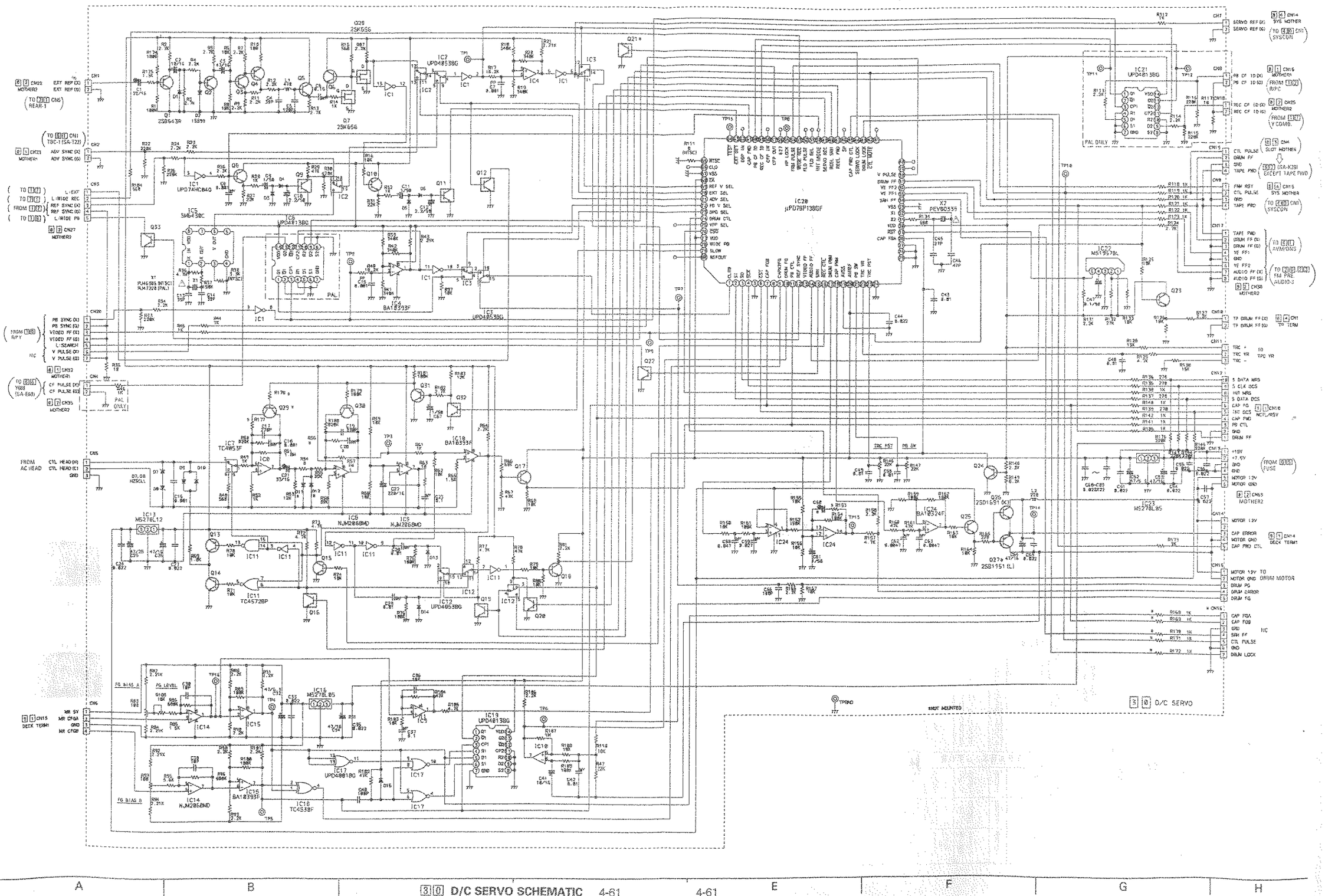
— JACK —





FRONT 4-60 4-60

4.49 DRUM/CAPSTAN SERVO SCHEMATIC DIAGRAM


Q28 2SK656
Q1 2SB643R
Q2 1SS99
Q7 2SK656
IC2 UPD48538G
IC3 TL084CN
IC4 BA10324F
IC1 UPD74HCB4Q
IC5 5M6430C
IC6 UPD4813BG
IC7 TC4W53F
IC8 BA10393F
IC9 NJM2068MD
IC10 MS278L12
IC11 TC4572BP
IC12 UPD4053BG
IC13 MS278L12
IC14 NJM2068MD
IC15 BA10393F
IC16 MS278L05
IC17 UPD4081BG
IC18 TC4538F
IC19 UPD4813BG
IC20 TC4W53F
IC21 UPD4813BG
IC22 MS1957BL
IC23 MS278L05
IC24 BA10324F
IC28 μPD78P138GF
X1 PJM4.5MS INTSC1 PLM7228 (PAL)
X2 PEV80335
Q29 2SB643R
Q30 2SD1651 (K)
Q31 2SB1151 (L)
D1 1SS99
D7,D8 MZ5CLL
CN1 EXT REF (X) EXT REF (G)
CN2 ADV SYNC (X) ADV SYNC (G)
CN3 L-EXT L-WIDE REC REF SYNC (X) REF SYNC (G) L-WIDE PB
CN4 CTL HEAD (R) CTL HEAD (C) GND
CN5 PB SYNC (X) PB SYNC (G) VIDEO FF (X) VIDEO FF (G) L-SEARCH V PULSE (X) V PULSE (G)
CN6 CF PULSE (X) CF PULSE (G)
CN7 SERVO REF (X) SERVO REF (G)
CN8 PB CF ID (X) PB CF ID (G) REC CF ID (X) REC CF ID (G)
CN9 CTL PULSE DRUM FF GND TAPE FWD
CN10 FWD RVS CTL PULSE GND TAPE FWD
CN11 TAPE FWD DRUM FF (X) DRUM FF (G) VE FF1 GND VE FF2 AUDIO FF (X) AUDIO FF (G)
CN12 TRC + TRC VR TRC −
CN13 5 DATA MPS 5 CLK DCS INIT MPS 5 DATA DCS CAP FG TAC DCS CAP FG CTL PB CTL GND DRUM FF
CN14 +15V +7.5V GND GND MOTOR 12V MOTOR GND
CN15 MOTOR 12V MOTOR GND CAP ERROR CAP FWD CTL
CN16 MOTOR 12V TO MOTOR GND DRUM MOTOR DRUM PG DRUM ERROR DRUM FG
CN17 CAP FGA CAP FGB GND SRM FF CTL PULSE GND DRUM LOCK
CN18 REC CF ID (X) REC CF ID (G)
TO CN1 REAR-1
TO CN1 TBC-1 (SA-T23)
TO CN1 Y688 (SA-E60)
FROM AC HEAD
FROM CN5 R/P Y
TO CN7 SYSCON
TO CN16 R/PC
TO CN25 Y COMB.
TO CN4 SLOT MOTHER
TO CN1 (SA-K29) EXCEPT TAPE FWD
TO CN15 SYS MOTHER
TO CN1 SYSCON
TO CN1 AVMIXING
TO CN1 FM PRE (AUDIO-3
TO CN1 TP TERM
TO CN15 DECK TERM1
TO CN14 DECK TERM1
FROM CN15 DECK TERM1
FROM FUSE
TO TPC VR
NOT MOUNTED
3 0 D/C SERVO

— DC voltage —

SYMBOL No.		REC	PB
INTEGRATED CIRCUIT			
IC1	1	4.6	4.6
	2	0.4	0.4
	3	4.5	4.6
	4	0.4	0.4
	5	5.1	5.1
	6	0.1	0.1
	7	0.1	0.4
	8	0.4	0.4
	9	4.6	4.7
	10	0.1	0.1
	11	5.1	5.1
	12	5.1	5.1
	13	0.1	0.1
	14	5.1	5.1
	15	0.0	0.1
	16	5.1	5.1
IC2	1	4.9	4.9
	2	4.6	4.6
	3	0.6	4.6
	4	4.6	4.6
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.1	0.1
	10	0.1	0.1
	11	0.0	5.0
	12	0.0	0.0
	13	4.6	4.6
	14	0.0	4.6
	15	4.6	4.6
	16	5.1	5.1
IC3	1	0.0	0.0
	2	0.1	0.1
	3	0.1	0.1
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.5	4.5
	10	4.5	4.5
	11	5.0	5.0
	12	0.4	0.4
	13	0.1	0.1
	14	0.1	0.1
	15	0.1	0.1
	16	5.1	5.1
IC4	1	5.0	5.0
	2	0.4	0.3
	3	3.3	3.3
	4	3.3	3.3
	5	0.0	0.4
	6	0.0	5.0
	7	5.0	5.0
	8	5.1	5.1
IC5	1	1.3	1.3
	2	0.0	0.0
	3	5.5	5.5
	4	0.0	2.4
	5	5.0	0.1
	6	4.0	0.1
	7	0.0	0.0
	8	5.1	5.1
IC7	1	6.1	6.1
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	12.1	6.1
	6	6.2	6.1
	7	6.1	6.1
	8	12.1	12.1
IC8	1	6.0	6.1
	2	6.0	6.1
	3	6.0	6.0
	4	6.1	6.1
	5	0.0	6.1
	6	0.0	6.0
	7	0.0	6.0
	8	12.1	0.0
IC9	1	3.0	3.0
	2	3.0	3.0
	3	5.0	6.1
	4	6.0	6.1
	5	6.0	6.1
	6	6.1	6.1
	7	0.0	6.1
	8	12.1	12.1
IC10	1	6.2	7.0
	2	6.1	6.8
	3	0.0	0.0
	4	0.7	0.7
	5	0.0	5.7
	6	0.6	5.6
	7	0.6	5.6
	8	12.1	12.1
IC11	1	0.2	11.7
	2	7.0	0.4

SYMBOL No.		REC	PB
IC11	3	12.1	0.0
	4	0.1	12.1
	5	6.0	6.0
	6	0.1	12.1
	7	6.3	12.1
	8	0.0	0.0
	9	0.0	6.9
	10	6.9	6.9
	11	6.9	7.0
	12	9.2	12.1
	13	12.1	12.1
	14	12.1	12.1
	15	12.1	12.1
	16	12.1	12.1
IC12	1	0.4	0.4
	2	5.0	5.0
	3	5.0	5.0
	4	5.0	5.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	12.0	12.0
	10	0.1	0.1
	11	0.1	12.1
	12	0.1	12.1
	13	0.4	0.4
	14	7.0	0.4
	15	0.4	0.4
	16	12.1	12.1
IC13	1	12.1	12.1
	2	9.0	12.0
	3	15.0	15.0
IC14	1	2.6	2.6
	2	2.5	2.5
	3	2.5	2.5
	4	2.0	2.5
	5	2.5	2.5
	6	2.5	2.5
	7	2.7	2.7
	8	5.1	5.1
IC15	1	2.6	2.6
	2	2.5	2.5
	3	2.5	2.5
	4	2.0	2.5
	5	2.5	2.5
	6	2.5	2.5
	7	2.7	2.7
	8	5.1	5.1
IC16	1	5.1	5.1
	2	5.0	7.6
	3	7.6	7.6
IC17	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	0.0	0.0
	12	0.0	0.0
	13	0.0	0.0
	14	0.0	0.0
IC18	1	2.6	2.6
	2	2.6	2.6
	3	2.6	2.6
	4	2.6	2.6
	5	5.1	5.1
IC19	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	0.0	0.0
	12	0.0	0.0
	13	0.0	0.0
	14	0.0	0.0
IC20	1	0.1	0.0
	2	4.3	4.3
	3	4.3	4.3
	4	4.3	4.3
	5	0.0	0.0
	6	4.2	4.2
	7	0.0	0.0
	8	4.2	4.2
	9	2.2	2.2
	10	2.2	2.2
	11	2.2	2.2
	12	0.1	0.1
	13	2.5	2.5

SYMBOL No.		REC	PB
IC20	14	5.0	2.5
	15	5.0	0.1
	16	5.0	5.0
	17	5.0	5.0
	18	5.0	5.0
	19	5.0	5.0
	20	5.0	5.0
	21	5.0	5.0
	22	5.0	5.0
	23	5.0	5.0
	24	5.0	5.0
	25	5.0	5.0
	26	5.0	5.0
	27	5.0	5.0
	28	5.0	5.0
	29	5.0	5.0
	30	5.0	5.0
	31	5.0	5.0
	32	5.0	5.0
	33	5.0	5.0
	34	5.0	5.0
	35	5.0	5.0
	36	5.0	5.0
	37	5.0	5.0
	38	5.0	5.0
	39	5.0	5.0
	40	5.0	5.0
	41	5.0	5.0
	42	5.0	5.0
	43	5.0	5.0
	44	5.0	5.0
	45	5.0	5.0
	46	5.0	5.0
	47	5.0	5.0
	48	5.0	5.0
	49	5.0	5.0
	50	5.0	5.0
	51	5.0	5.0
	52	5.0	5.0
	53	5.0	5.0
	54	5.0	5.0
	55	5.0	5.0
	56	5.0	5.0
	57	5.0	5.0
	58	5.0	5.0
	59	5.0	5.0
	60	5.0	5.0
	61	5.0	5.0
	62	5.0	5.0
	63	5.0	5.0
	64	5.0	5.0
	65	5.0	5.0
	66	5.0	5.0
	67	5.0	5.0
	68	5.0	5.0
	69	5.0	5.0
	70	5.0	5.0
	71	5.0	5.0
	72	5.0	5.0
	73	5.0	5.0
	74	4.5	4.5
	75	4.5	4.5
	76	4.5	5.0
	77	5.0	5.0
	78	0.0	0.0
	79	0.0	0.0
	80	0.0	0.0
IC22	1	5.1	5.1
	2	0.0	0.0
	3	4.5	5.1
	4	5.1	5.1
	5	5.1	5.1
IC23	1	5.1	5.1
	2	5.0	7.6
	3	7.6	7.6
IC24	1	1.9	1.8
	2	1.9	1.8
	3	15.1	15.1
	4	1.9	1.8
	5	1.9	1.8
	6	1.9	1.8
	7	1.9	1.8
	8	1.9	1.8
	9	1.9	1.8
	10	1.9	1.8
	11	2.2	2.2
	12	2.3	2.3
	13	2.3	2.3
	14	2.3	2.3

TRANSISTOR

Q1	B	6.5	6.5
	C	0.0	0.0
	E	7.2	7.2
Q2	B	0.1	0.1
	C	0.0	0.0
	E	0.7	0.7
Q3	B	4.4	4.4
	C	11.3	11.3
	E	3.8	3.8

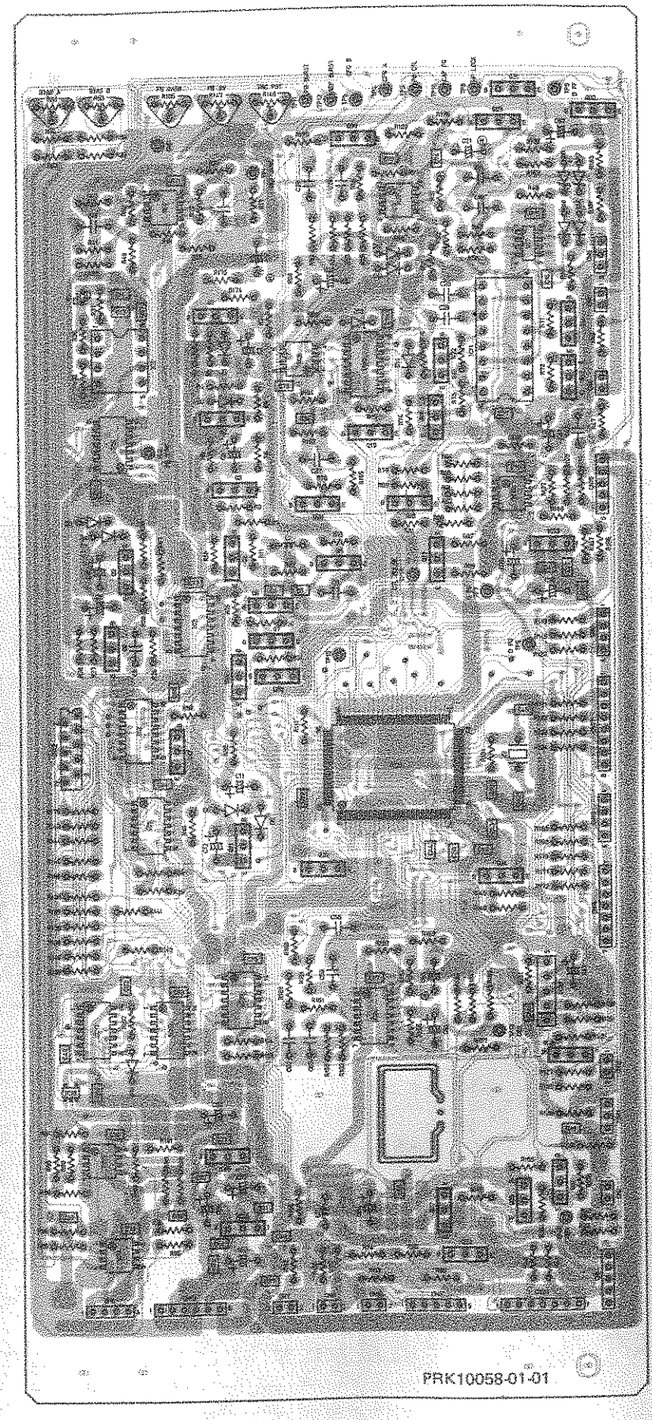
SYMBOL No.		REC	PB
Q4	B	11.3	11.4
	C	6.8	6.8
	E	12.0	12.0
Q5	B	6.8	6.8
	C	0.0	12.1
	E	6.1	6.2
Q6	B	3.3	3.3
	C	5.1	5.1
	E	2.8	2.8
Q7	B	3.3	3.3
	C	2.8	2.8
	E	0.0	0.0
Q8	B	0.4	0.4
	C	5.1	5.1
	E	0.7	0.7
Q9	B	1.5	1.5
	C	0.1	0.0
	E	0.0	0.0
Q10	B	5.0	5.1
	C	4.5	4.5
	E		
Q11	B	0.0	0.0
	C	5.0	5.1
	E	0.0	0.0
Q12	B	0.0	5.0
	C	0.0	0.0
	E	0.0	0.0
Q13	B	11.7	12.1
	C	0.0	0.0
	E	12.1	12.1
Q14	B	0.3	0.0
	C	0.0	5.0
	E	0.0	0.0
Q15	B	0.3	0.0
	C	0.0	12.0
	E	0.0	0.0
Q16	B	5.0	0.0
	C	0.0	12.0
	E	0.0	0.0
Q17	B	2.5	2.8
	C	2.5	2.5
	E	2.5	2.5
Q18	B	0.3	0.7
	C	0.0	0.0
	E	0.0	0.0
Q19	B	5.0	5.0
	C	5.0	5.0
	E	5.0	5.0
Q20	B	0.0	0.0
	C	12.0	12.0
	E	0.0	0.0
Q22	B	0.0	0.0
	C	5.0	5.0
	E		
Q23	B	2.5	2.5
	C	2.5	2.5
	E	2.5	2.5
Q24	B	4.0	4.0
	C	0.6	0.0
	E	0.2	0.0
Q25	B	3.1	3.2
	C	15.1	15.1
	E	2.5	2.8
Q26	B	2.5	2.6
	C	12.1	12.1
	E	1.9	2.0
Q27	B	2.5	2.8
	C	0.0	0.0
	E	1.9	2.0
Q28	B	0.0	0.0
	C	0.0	0.0
	E	0.0	0.0
Q29	B	7.0	7.0
	C	7.4	6.5
	E	6.4	6.5
Q30	B	6.8	6.8
	C	6.0	6.0
	E	6.0	6.1
Q31	B	12.1	12.1
	C	0.0	0.0
	E	8.5	8.6

SYMBOL No.		REC	PB
Q32	B	0.0	0.0
	C	12.1	12.1
	E	0.0	0.0
Q33	B	0.0	0.0
	C	0.6	0.0
	E	0.0	0.0

CONNECTOR

CN1	1	0.0	0.0
	2	0.0	0.0
CN2	1	4.6	4.6
	2	0.0	0.0
CN3	1	0.2	0.0
	2	5.0	5.1
	3	4.6	4.6
	4	0.0	0.0
	5	9.6	9.6
CN5	1	6.2	6.1
	2	6.1	6.1
	3	0.0	0.0
CN6	1	5.1	5.1
	2	5.0	5.0
	3	0.0	0.5
	4	2.5	2.5
CN7	1	0.5	0.5
	2	0.0	0.0
CN9	1	5.0	5.0
	2	5.1	5.0
	3	0.4	0.4
	4	4.9	4.9
CN10	1	0.0	2.2
	2	0.0	0.0
CN11	1	4.4	4.5
	2	2.5	2.6
	3	0.6	0.6
CN12	1	2.5	0.0
	2	0.0	0.0
	3	0.5	0.0
	4	5.4	5.4
	5	2.6	2.7
	6	4.8	4.8
	7	4.4	4.4
	8	4.8	4.8
	9	4.4	4.4
	10	4.9	4.9
CN13	1	15.1	15.1
	2	7.6	7.6
	3	0.0	0.0
	4	0.0	0.0
	5	12.0	12.0
	6	0.0	0.0
CN14	1	12.3	12.3
	2	0.1	0.0
	3	1.0	0.0
	4	0.0	0.0
	5	50	5.0
CN15	1	12.3	12.3
	2	0.0	0.0
	3	0.0	0.0
	4	2.5	2.8
	5	2.5	3.9
CN17	1	4.3	4.3
	2	4.0	4.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	4.0	4.0
	7	0.0	0.0
	8	0.0	0.0
CN19	1	3.1	0.6
	2	3.0	0.0
	3	0.0	0.0
	4	4.8	4.9
CN20	1	4.6	4.7
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	5.0	5.0
	6	5.0	0.0
	7	5.0	0.0

4.50 DRUM/CAPSTAN SERVO CIRCUIT BOARD



— MAIN WAVEFORMS OF A/C SERVO CIRCUIT —

TP1

5 Vp-p/15.75 KHz

TP3

[PB]
10 Vp-p/30 Hz

TP4, TP5

UPPER: TP4
LOWER: TP5

TP6, TP7

UPPER: TP6 (960Hz)
LOWER: TP7 (30 Hz)

TP9

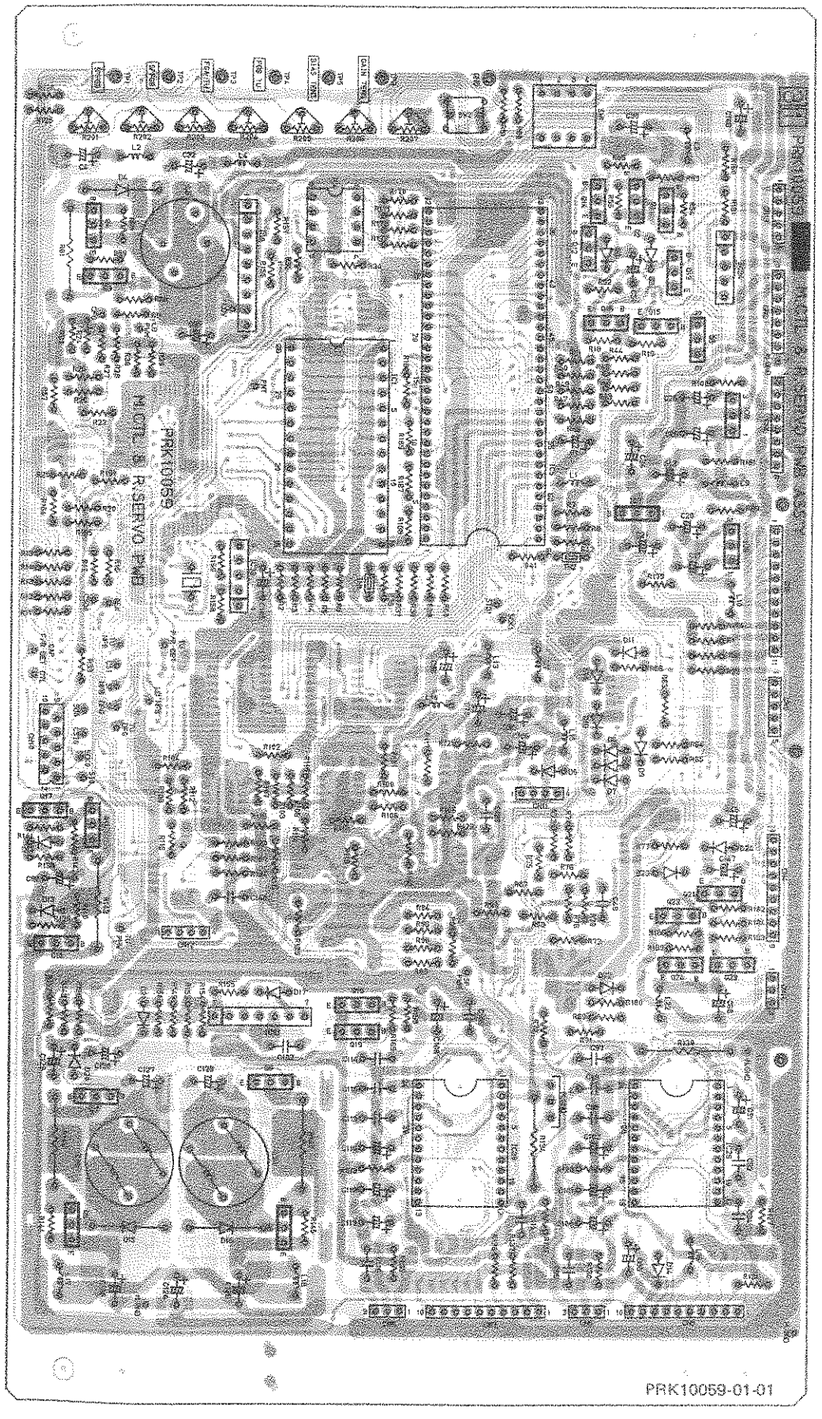
5.0 Vp-p/30 Hz

TP16

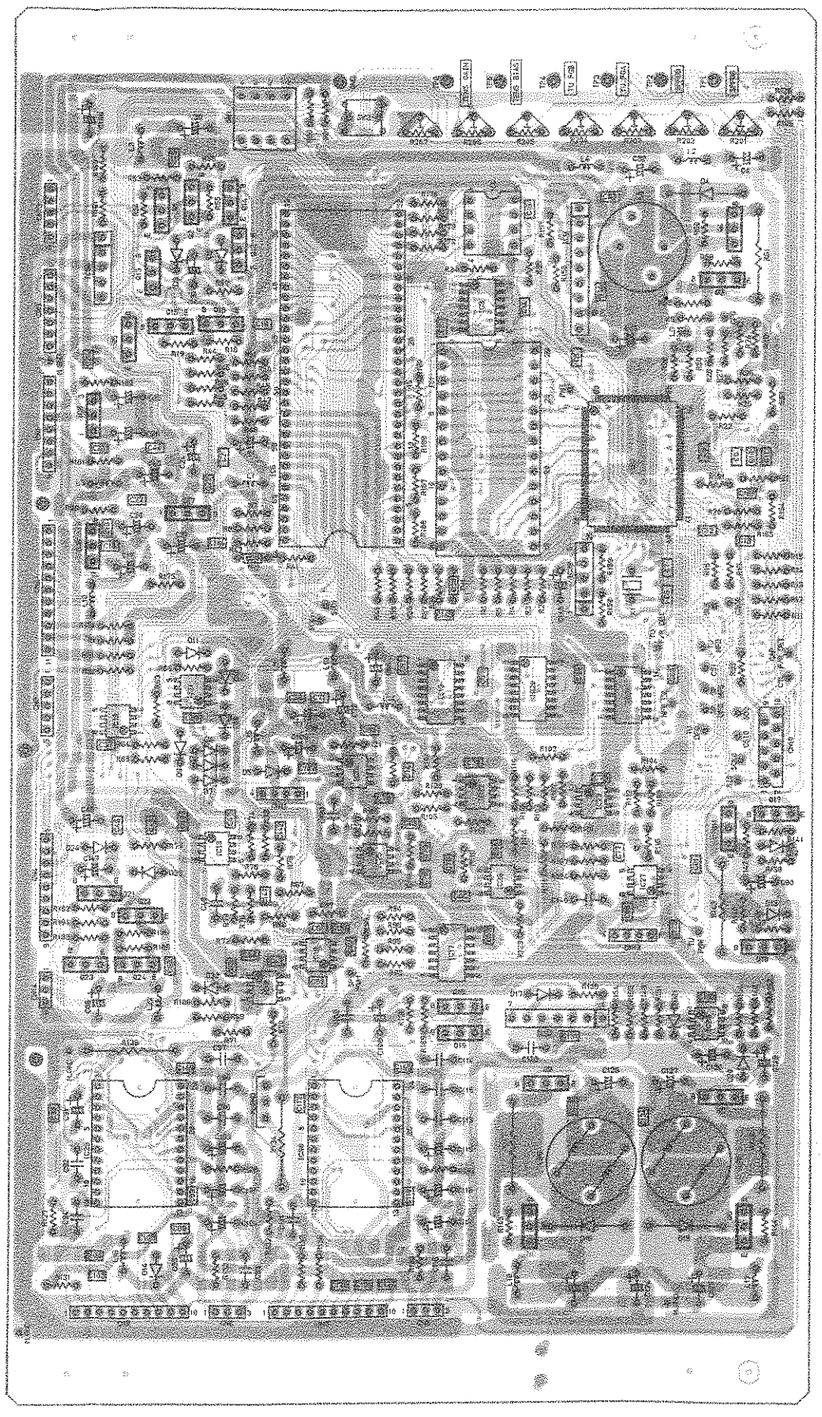
2.1 Vp-p

4.51 MECHACONTROL/REEL SERVO CIRCUIT BOARD

— Rear —



— Front —



— MAIN WAVEFORMS OF MCTL/REEL SERVO CIRCUIT —

TP1, TP2

UPPER: TP1
LOWER: TP2

TP3, TP4

UPPER: TP3
LOWER TP4

— DC voltage(1/2) —

SYMBOL	No.	REC	PB
INTEGRATED CIRCUIT			
IC1	1	4.9	4.9
	2	4.5	4.5
	3	2.1	2.1
	4	0.9	0.9
	5	2.3	2.3
	6	2.2	2.2
	7	1.3	1.3
	8	2.2	2.2
	9	2.2	2.2
	10	2.2	2.2
	11	2.2	2.2
	12	2.2	2.2
	13	2.2	2.2
	14	0.0	0.0
	15	2.2	2.2
	16	2.2	2.2
	17	1.2	1.2
	18	1.1	1.1
	19	1.1	1.1
	20	2.2	2.2
	21	1.2	1.2
	22	2.2	2.2
	23	2.2	2.2
	24	1.2	1.2
	25	1.2	1.2
	26	0.0	0.0
	27	0.5	0.5
	28	4.9	4.9
IC2	1	1.3	1.4
	2	2.2	2.2
	3	2.2	2.2
	4	2.2	2.2
	5	2.2	2.2
	6	3.2	3.2
	7	2.2	2.2
	8	2.2	2.2
	9	2.2	2.2
	10	2.2	2.2
	11	0.0	0.0
	12	0.0	0.0
	13	0.0	0.0
	14	0.0	0.0
	15	0.0	0.0
	16	0.0	0.0
	17	0.1	0.1
	18	4.4	4.4
	19	4.4	4.4
	20	4.4	4.4
	21	4.4	4.4
	22	4.3	4.3
	23	3.3	3.3
	24	3.7	4.5
	25	4.3	4.2
	26	2.2	2.2
	27	4.3	4.5
	28	3.9	4.7
	29	3.9	3.9
	30	0.0	0.0
	31	0.4	0.0
	32	4.4	4.4
	33	0.0	0.0
	34	0.4	0.4
	35	2.2	2.2
	36	4.4	4.4
	37	4.4	4.4
	38	4.4	4.4
	39	3.9	3.9
	40	3.1	3.1
	41	1.4	1.4
	42	3.2	3.2
	43	2.0	2.0
	44	5.1	5.1
	45	1.1	1.1
	46	0.2	0.2
	47	1.1	1.1
	48	0.5	0.5
	49	1.1	1.1
	50	0.2	0.2
	51	1.1	1.1
	52	0.5	0.5
	53	0.5	0.5
	54	0.5	0.5
	55	0.1	0.1
	56	1.4	1.4
	57	4.9	4.9
	58	4.4	4.4
	59	2.2	2.2
	60	2.5	2.5
IC2	61	4.9	4.9
	62	2.6	2.6
	63	0.0	0.0
	64	0.0	0.0
	65	0.0	0.0
	66	0.7	0.7
	67	0.3	0.5
	68	1.4	0.6
	69	4.9	4.9
	70	4.4	4.9
	71	4.9	4.9
	72	4.9	4.9
	73	4.0	4.0
	74	0.0	0.0
	75	3.2	3.2
	76	0.5	0.5
	77	0.8	0.8
	78	2.5	2.5
	79	2.6	2.6
	80	2.5	2.3
IC3	1	3.2	3.1
	2	3.6	3.7
	3	0.7	1.7
	4	1.5	1.7
	5	4.9	2.3
	6	4.9	4.9
	7	0.0	0.0
	8	4.9	4.9
	9	1.3	1.4
	10	1.7	1.7
	11	0.8	0.8
	12	4.8	4.8
	13	4.8	4.8
	14	4.9	4.9
IC4	1	0.0	0.0
	2	4.9	4.9
	3	0.9	0.8
	4	4.8	4.8
	5	0.0	0.0
	6	0.0	0.0
	7	4.9	4.9
	8	4.9	4.9
IC5	1	4.8	4.8
	2	0.1	0.1
	3	4.8	4.8
	4	0.5	0.5
	5	4.5	4.9
	6	2.5	2.5
	7	2.4	2.4
	8	4.8	4.8
	9	4.9	4.9
	10	4.9	4.9
	11	4.8	4.8
	12	4.8	4.8
	13	6.0	0.9
	14	4.0	4.0
	15	0.0	0.0
	16	0.0	0.0
	17	0.0	0.0
	18	0.0	0.0
	19	0.0	0.0
	20	0.0	0.0
	21	0.0	0.0
	22	4.9	4.9
	23	0.0	0.0
	24	0.0	0.0
	25	0.0	4.6
	26	4.8	4.8
	27	4.8	4.8
	28	4.8	4.8
	29	4.8	4.8
	30	4.8	4.8
	31	4.8	4.8
	32	4.8	4.8
	33	4.8	4.0
	34	4.8	0.0
	35	0.0	0.0
	36	4.9	4.9
	37	4.9	4.9
	38	4.9	4.9
	39	4.9	4.9
	40	4.9	4.9
	41	4.9	4.9
	42	4.9	4.9
	43	4.9	4.9
	44	4.8	4.8

SYMBOL	No.	REC	PB
IC5	45	0.0	0.0
	46	0.0	0.0
	47	5.0	5.0
	48	4.8	4.8
	49	4.8	4.8
	50	0.0	0.0
	51	3.6	3.8
	52	1.8	1.8
	53	2.1	2.1
	54	1.9	1.9
	55	2.1	2.0
	56	2.1	2.1
	57	2.5	2.6
	58	2.5	2.6
	59	2.4	2.4
	60	0.0	0.0
	61	4.7	4.7
	62	0.0	0.0
	63	4.8	4.8
	64	4.8	4.9
IC6	1	0.0	0.0
	2	-14.0	-14.0
	3	-12.0	-12.0
IC7	1	7.6	7.6
	2	0.0	0.0
	3	5.0	5.0
IC8	1	12.2	12.2
	2	0.0	0.0
	3	14.2	14.2
IC9	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	17.7	17.8
	9	17.7	17.8
IC10	1	6.4	6.4
	2	3.2	3.3
	3	3.2	3.3
	4	0.0	0.0
	5	0.5	0.5
	6	0.5	0.5
	7	16.9	16.9
	8	12.1	12.1
IC11	1	4.5	0.1
	2	4.5	0.1
	3	4.5	4.5
	4	0.0	0.0
	5	0.6	0.6
	6	0.6	0.6
	7	0.6	0.6
	8	12.1	12.1
IC12	1	0.4	1.0
	2	0.1	0.1
	3	0.1	0.1
	4	0.0	0.0
	5	0.3	0.2
	6	0.3	0.2
	7	3.0	1.8
	8	12.1	12.1
IC13	1	0.2	0.2
	2	1.7	1.7
	3	1.7	1.7
	4	-11.9	-11.9
	5	0.2	0.2
	6	0.2	0.2
	7	0.9	0.9
	8	12.1	12.1
IC17	1	0.3	0.2
	2	0.3	0.2
	3	0.1	0.1
	4	0.1	0.1
	5	4.9	4.9
	6	0.0	0.0
	7	0.0	0.0
	8	0.1	0.0
	9	0.1	0.0
	10	0.1	0.0
	11	0.1	0.0

SYMBOL	No.	REC	PB
IC17	12	0.0	0.0
	13	4.9	4.9
	14	5.0	5.0
IC18	1	0.3	0.2
	2	0.3	0.2
	3	-11.9	0.2
	4	0.1	0.2
	5	0.1	0.2
	6	0.1	0.1
	7	0.1	0.1
	8	5.0	5.0
IC19	1	0.0	0.1
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.2	0.0
	10	0.0	0.0
	11	0.0	0.0
	12	0.0	0.0
	13	—	—
	14	—	—
	15	0.0	0.0
	16	4.8	4.8
IC20	1	0.0	0.0
	2	0.0	0.0
	3	1.0	1.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	4.9	4.9
	12	—	—
	13	—	—
	14	—	—
	15	0.0	0.0
	16	4.8	4.8
IC21	1	4.8	4.8
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	0.0	0.0
	6	0.0	0.0
	7	0.0	0.0
	8	0.0	0.0
	9	0.0	0.0
	10	0.0	0.0
	11	0.0	0.0
	12	0.0	0.0
	13	4.8	4.8
	14	4.8	4.8
IC22	1	0.0	0.3
	2	0.2	0.2
	3	0.0	0.2
	4	0.0	0.2
	5	0.5	0.5
	6	0.5	0.5
	7	0.5	0.5
	8	4.9	4.9
IC23	1	0	3
	2	0.2	0.2
	3	0.2	0.2
	4	0.2	0.2
	5	0.5	0.5
	6	0.5	0.5
	7	0.3	0.3
	8	4.9	4.9
IC24	1	2.5	2.5
	2	2.5	2.5
	3	2.5	2.5
	4	2.5	2.5
	5	0.5	0.5
	6	0.5	0.5
	7	0.5	0.5
	8	4.9	4.9

— DC voltage(2/2) —

SYMBOL No.		REC	PB
IC25	1	2.5	2.5
	2	0.0	2.5
	3	0.0	0.0
	4	0.0	2.5
	5	2.5	0.0
	6	0.0	2.5
	7	2.2	2.2
	8	4.9	4.9
IC26	1	0.2	2.5
	2	0.3	2.5
	3	2.5	2.5
	4	0.0	0.0
	5	0.5	2.5
	6	2.5	2.5
	7	2.4	2.5
	8	4.9	4.9
IC27	1	2.5	2.5
	2	2.5	2.5
	3	0.0	0.0
	4	2.5	2.5
	5	0.5	0.5
	6	2.5	2.5
	7	2.4	2.5
	8	4.9	4.9
IC28	1	0.4	0.3
	2	2.0	2.1
	3	0.0	0.0
	4	1.2	1.2
	5	0.4	0.4
	6	4.3	4.3
	7	0.4	0.4
	8	4.8	4.8
IC29	1	1.0	1.2
	2	0.1	0.1
	3	0.1	0.2
	4	0.5	0.7
	5	2.2	2.2
	6	2.2	2.2
	7	2.2	2.2
	8	2.2	2.2
	9	2.2	2.2
	10	2.2	2.2
	11	1.4	1.4
	12	2.0	2.0
	13	0.0	0.0
	14	0.0	0.0
	15	0.1	0.1
	16	0.0	0.0
	17	0.0	0.0
	18	2.0	2.0
	19	1.0	1.0
	20	0.0	0.0
	21	0.0	0.0
	22	0.1	0.1
	23	1.0	1.2
	24	4.2	3.7
IC30	1	3.8	0.2
	2	0.4	0.0
	3	2.6	0.3
	4	2.6	0.1
	5	2.6	2.6
	6	2.6	2.6
	7	2.6	2.6
	8	2.6	2.6
	9	2.6	2.6
	10	2.4	2.6
	11	1.7	2.1
	12	1.8	1.4
	13	2.9	2.4
	14	2.9	2.6
	15	3.8	0.1
	16	3.8	3.8
	17	3.8	3.8
	18	3.0	3.3
	19	0.0	0.0
	20	0.0	0.0
	21	0.7	0.7
	22	0.3	0.3
	23	4.3	5.0
	24	6.0	

SYMBOL No.		REC	PB
IC31	1	2.4	2.4
	2	-0.1	-0.1
	3	4.8	4.8
	4	0.0	0.0
	5	2.4	2.4
	6	0.0	0.0
	7	4.8	4.8
IC33	1	4.9	4.9
	2	1.4	1.4
	3	0.0	0.0
	4	0.3	0.3
	5	4.8	4.8
IC34	1	17.7	17.8
	2	1.6	1.6
	3	0.0	0.0
	4	0.3	0.3
	5	4.8	4.8

TRANSISTOR

Q1	B	17.7	17.8
	C	1.5	1.6
	E	17.7	17.8
Q2	B	17.0	17.0
	C	17.6	17.7
	E	17.7	17.8
Q3	B	0.7	0.7
	C	0.1	0.0
	E	0.0	0.0
Q4	B	17.0	17.0
	C	17.7	17.8
	E	17.7	17.8
Q5	B	7.6	7.6
	C	0.0	0.0
	E	0.0	0.0
Q6	B	17.6	17.6
	C	4.4	3.7
	E	17.7	17.7
Q7	B	0.3	0.3
	C	16.7	16.3
	E	0.0	0.0
Q8	B	17.4	17.5
	C	6.4	5.8
	E	17.7	17.7
Q9	B	0.4	0.4
	C	12.8	13.7
	E	0.0	0.0
Q10	B	0.0	0.0
	C	9.1	9.1
	E	0.0	0.0
Q11	B	0.7	0.7
	C	0.1	0.1
	E	0.0	0.0
Q12	B	0.0	0.0
	C	4.8	4.8
	E	4.9	4.9
Q13	B	0.0	0.0
	C	17.7	17.7
	E	0.0	0.0
Q14	B	4.8	4.8
	C	0.1	0.1
	E	0.0	0.0
Q15	B	0.0	0.0
	C	17.7	17.7
	E	0.0	0.0
Q16	B	17.7	17.7
	C	0.0	0.0
	E	17.7	17.7
Q17	B	0.0	0.0
	C	4.7	4.7
	E	4.8	4.8

SYMBOL No.		REC	PB
Q18	B	4.5	3.7
	C	0.8	1.1
	E	4.8	4.8
Q19	B	6.3	5.8
	C	1.9	1.8
	E	4.8	4.8
Q21	B	0.0	0.0
	C	17.7	17.7
	E	0.0	0.0
Q22	B	0.0	0.0
	C	17.7	17.7
	E	0.0	0.0
Q23	B	17.7	17.7
	C	0.0	0.0
	E	17.7	17.7
Q24	B	17.7	17.7
	C	0.0	0.0
	E	17.7	17.7

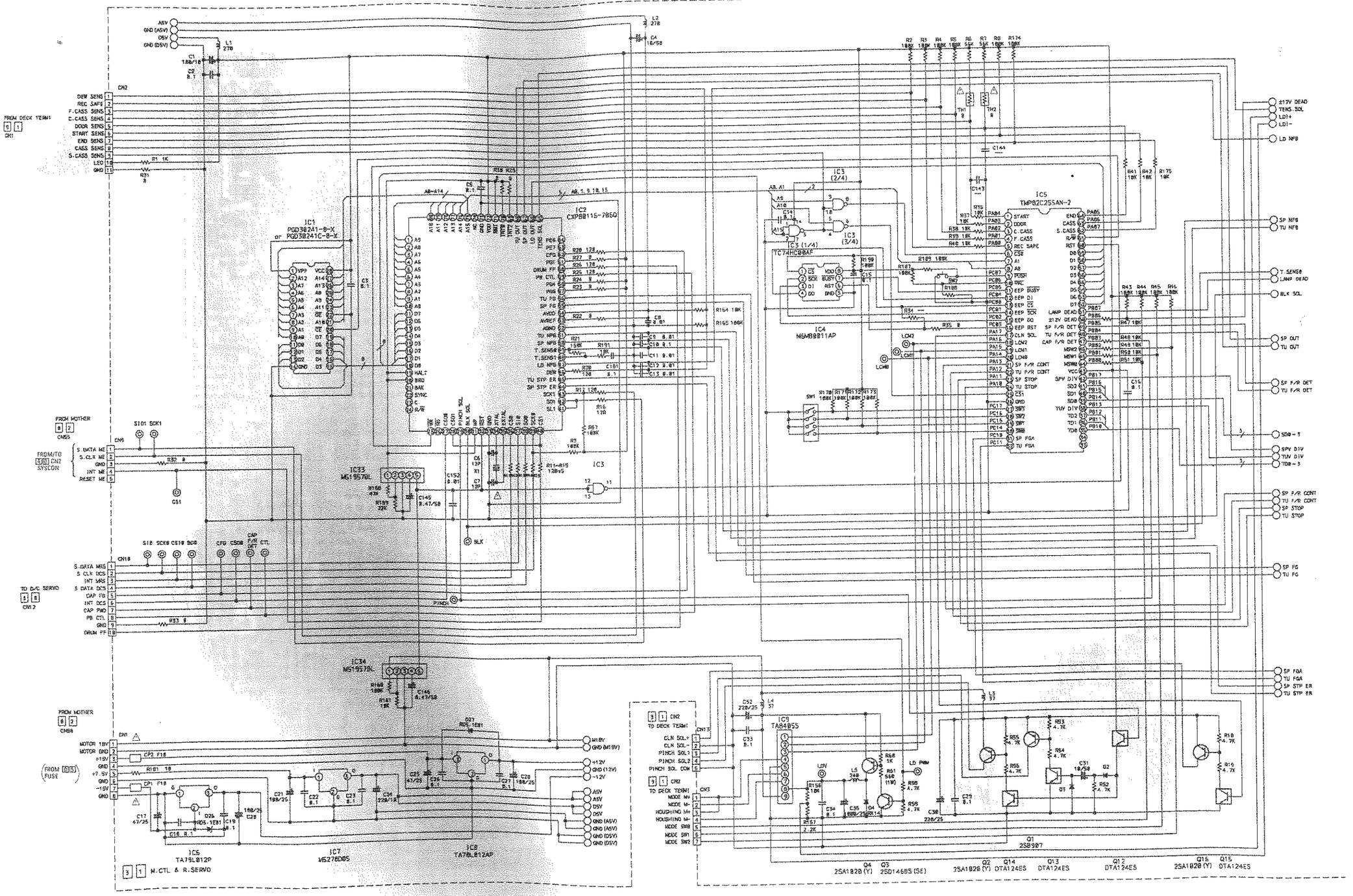
CONNECTOR

CN1	1	17.7	17.8
	2	0.0	0.0
	3	15.1	15.0
	4	0.0	0.0
	5	7.6	7.6
	6	0.0	0.0
	7	-14.5	-14.6
	8	0.0	0.0
CN2	1	0.3	0.3
	2	0.5	0.5
	3	0.0	0.0
	4	4.8	4.8
	5	0.1	0.1
	6	4.9	4.9
	7	4.9	4.9
	8	4.8	4.8
	9	0.0	0.0
	10	1.1	1.1
	11	0.0	0.0
CN3	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0
	4	0.0	0.0
	5	4.8	4.8
	6	0.0	0.0
	7	0.0	0.0
CN4	1	12.1	12.1
	2	0.0	0.0
	3	-11.9	-11.9
	4	3.1	3.1
	5	0.0	0.0
	6	2.5	2.5
	7	11.4	11.4
	8	4.9	4.9
	9	10.8	10.8
CN5	1	2.8	2.8
	2	1.6	1.6
	3	2.2	2.2
	4	2.2	2.2
	5	2.2	2.2
	6	2.2	2.2
	7	2.2	2.2
	8	2.2	2.2
	9	17.7	17.7
	10	9.1	9.1
CN6	1	1.0	1.1
	2	1.1	1.1
	3	1.0	1.0

SYMBOL No.		REC	PB
CN7	1	4.8	4.8
	2	3.2	3.6
	3	1.6	2.1
	4	2.2	2.2
	5	2.2	2.2
	6	2.2	2.2
	7	2.2	2.2
	8	2.2	2.2
	9	2.2	2.2
	10	2.2	2.2
CN8	1	5.2	4.4
	2	5.2	4.4
	3	5.0	4.4
CN9	1	1.3	0.5
	2	1.4	4.0
	3	0.3	0.3
	4	0.9	0.9
	5	5.0	5.0
CN10	1	4.9	4.9
	2	4.4	4.4
	3	4.4	4.4
	4	4.2	4.2
	5	4.6	4.5
	6	0.2	0.4
	7	0.0	0.0
	8	2.5	0.0
	9		
	10		
CN11	1	5.0	5.0
	2	5.2	5.2
	3	0.5	0.5
	4	2.5	2.5
CN12	1	5.0	5.0
	2	5.2	5.2
	3	0.5	0.5
	4	2.5	2.5
CN13	1	0.0	0.0
	2	0.0	0.0
	3	1.5	1.7
	4	17.6	17.7
	5	0.0	0.0
CN14	1	0.0	0.0
	2	0.0	0.0
	3	0.0	0.0

4.52 MECHACONTROL/REEL SERVO SCHEMATIC DIAGRAM

— DIAGRAM (1/2) —



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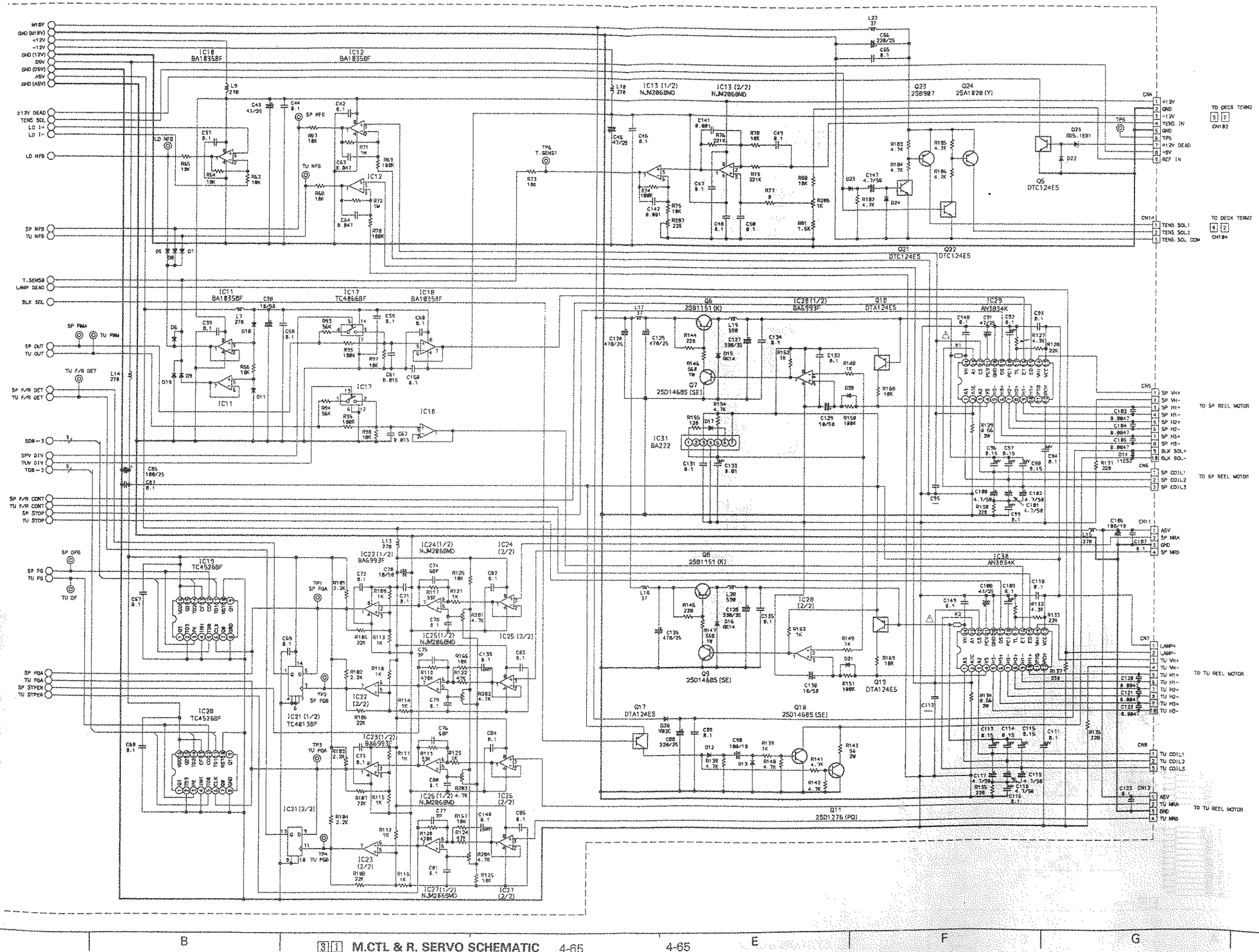
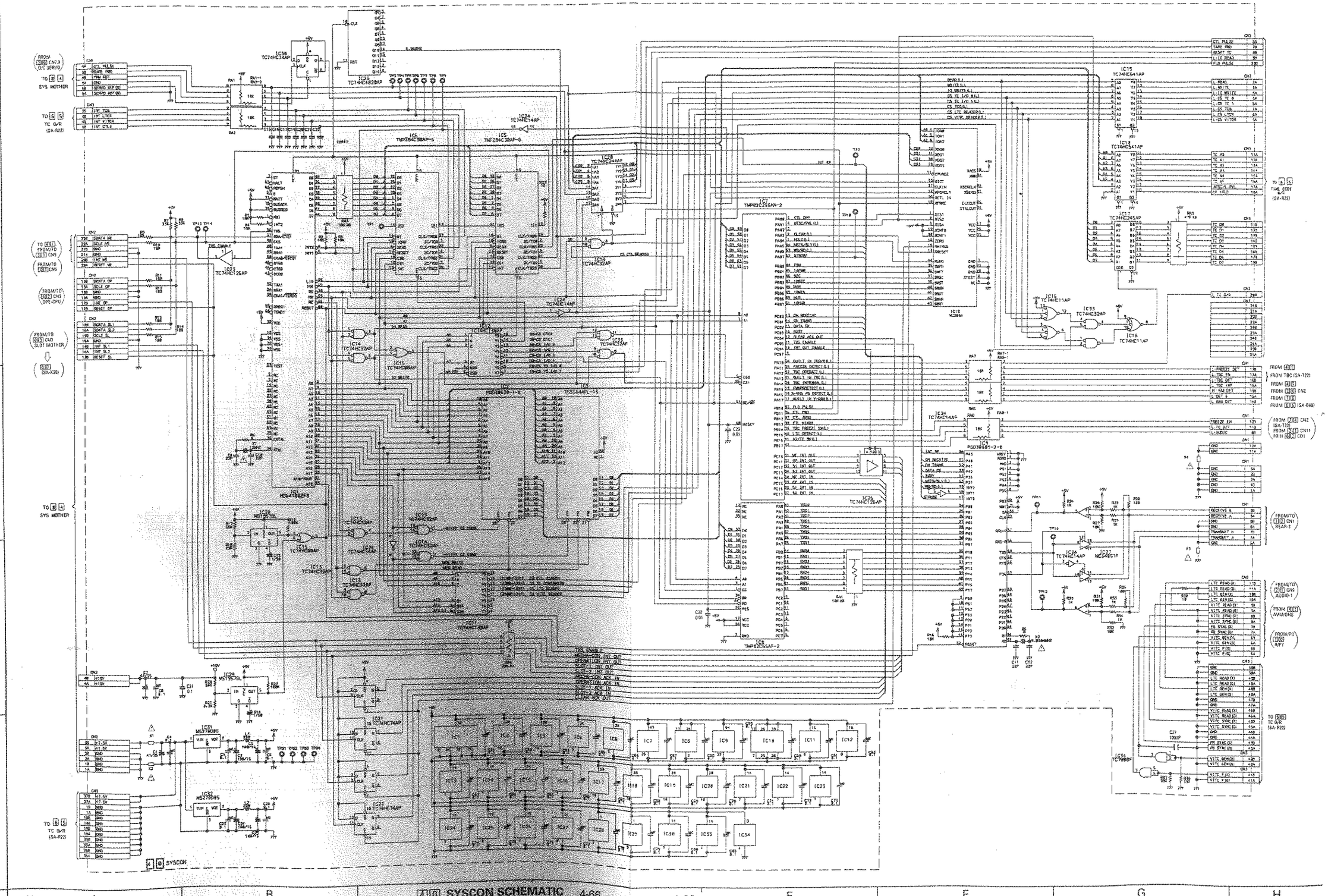
— DIAGRAM (2/2) —


IC18 BA10358F
IC12 BA10358F
IC13 (1/2) NJM2068MD
IC13 (2/2) NJM2068MD
Q23 2SB987
Q24 2SA1820 (Y)
Q5 DTC124ES
TO DECK TERM2
IC11 BA10358F
IC17 TC4866BF
IC18 BA10358F
Q6 2SB1151 (K)
IC28 (1/2) BA6993F
Q18 DTA124ES
IC29 AN3834K
Q7 2SD1468S (SE)
IC31 BA222
TO SP REEL MOTOR
IC19 TC4526BF
IC22 (1/2) BA6993F
IC24 (1/2) NJM2068MD
IC24 (2/2)
IC25 (1/2) NJM2068MD
IC25 (2/2)
IC21 (1/2) TC4013BF
IC27 (1/2) NJM2068MD
IC27 (2/2)
IC20 TC4526BF
IC23 (1/2) BA6993F
IC23 (2/2)
IC21 (2/2)
IC28 AN3834K
Q8 2SB1151 (K)
Q9 2SD1468S (SE)
Q19 DTA124ES
Q17 DTA124ES
Q19 2SD1468S (SE)
Q17 2SD1275 (PQ)
TO TU REEL MOTOR
SP FWD
TU FWD
SP REV
TU REV
SP F/R DET
TU F/R DET
SP F/R CONT
TU F/R CONT
SP STOP
TU STOP
SP FG
TU FG
SP PGA
TU PGA
SP STPER
TU STPER
T.SENS
LAMP DEAD
BLK SOL
LD I+
LD I-
LD NFB
SP NFB
TU NFB
TENS SOL
SP OUT
TU OUT
SPV DIV
TUV DIV
SP DFB
TU DFB
TENS SOL 1
TENS SOL 2
TENS SOL COM
SP VH+
SP VH-
SP H1+
SP H1-
SP H2+
SP H2-
SP H3+
SP H3-
BLK SOL+
BLK SOL-
SP COIL1
SP COIL2
SP COIL3
LAMP+
LAMP-
TU VH+
TU VH-
TU H1+
TU H1-
TU H2+
TU H2-
TU H3+
TU H3-
TU COIL1
TU COIL2
TU COIL3
ASV
SP MRA
GND
SP MRB
TU MRA
TU MRB

4.53 SYSCON SCHEMATIC DIAGRAM



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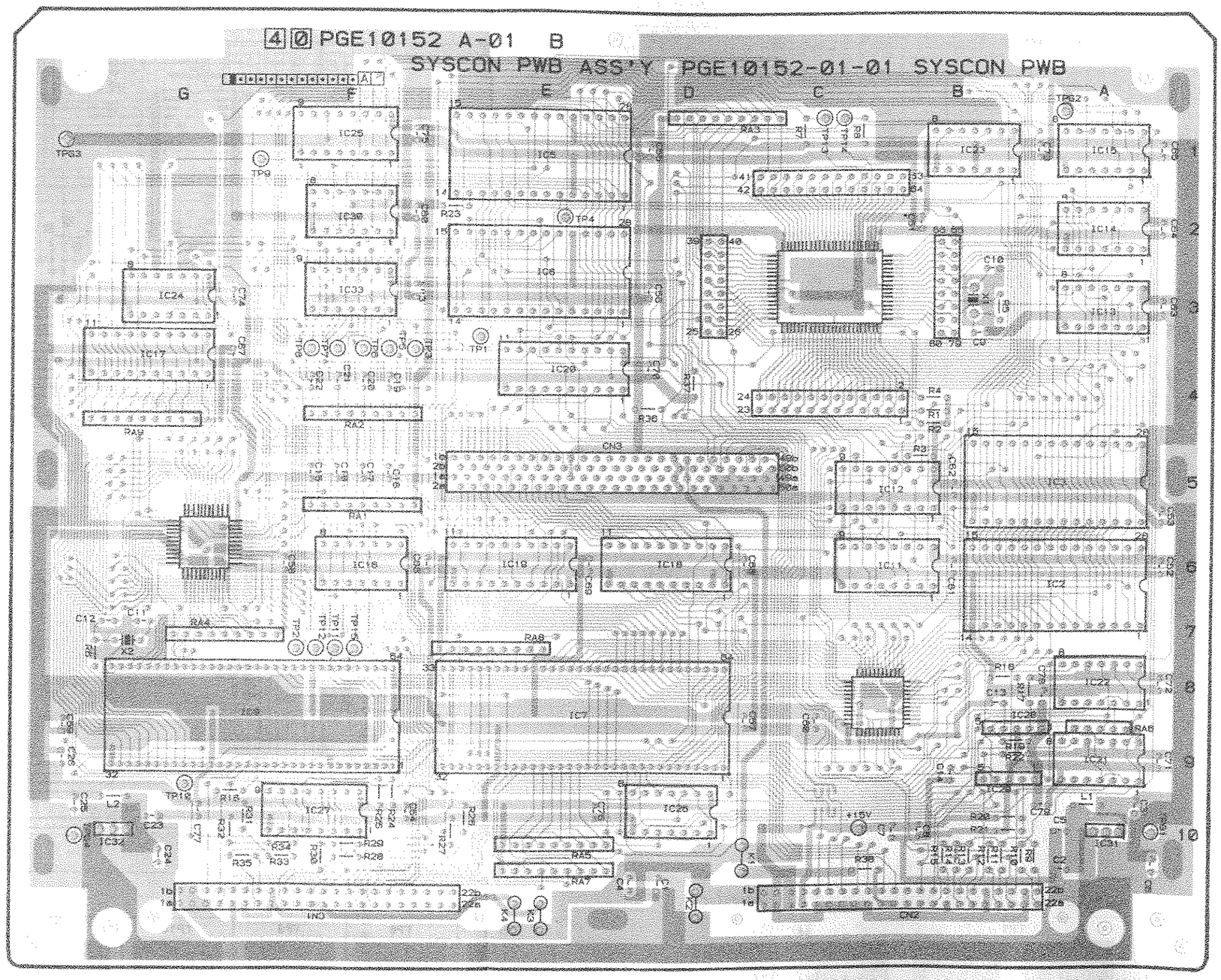
4.54 SYSCON CIRCUIT BOARD

— DC voltage —

SYMBOL No.		REC	PB
CONNECTOR			
CN1	4A	3.1	0.6
	3B	4.9	4.9
	4B	5.0	5.0
	3A	0.0	0.0
	5B	0.5	0.5
	5A	0.0	0.0
	17B	5.0	5.0
	17A	4.1	0.4
	16B	0.0	0.0
	16A	0.0	0.0
	15B	5.0	5.0
	15A	5.1	5.1
	14B	0.0	0.0
	12B	5.0	5.0
	11B	5.6	0.0
	6B	0.0	0.0
	12A	0.0	0.0
	11A	0.0	0.0
	2A	0.0	0.0
	2B	0.0	0.0
	2A	0.0	0.0
	1B	0.0	0.0
	1A	0.0	0.0
	5B	0.5	0.5
	5A	0.0	0.0
	8B	0.0	0.0
	8A	0.0	0.0
	7B	3.3	3.3
	7A	0.3	0.3
	6A	0.0	0.0
CN2	22B	1.2	0.1
	22A	4.9	4.9
	21B	0.0	0.0
	21A	0.0	0.0
	20B	3.9	4.0
	20A	5.0	5.0
	19B	1.3	0.2
	19A	4.9	4.9
	18B	0.0	0.0
	18A	0.0	0.0
	17B	3.9	4.0
	17A	5.0	5.0
	16B	1.3	0.1
	16A	4.9	4.9
	15B	4.9	4.9
	15A	0.0	0.0
	14B	3.9	3.9
	14A	5.0	5.0
	13B	5.0	5.0
	4B	15.0	15.0
	4A	15.0	15.0
	3B	7.6	7.6
	3A	7.6	7.6
	2B	0.0	0.0
	2A	0.0	0.0
	1B	0.0	0.0
	1A	0.0	0.0
	11B	0.0	0.0
	11A	0.0	0.0
	10B	0.0	0.0
	10A	0.1	0.0
	9B	1.0	1.0
	9A	1.0	1.0
	8B	4.7	4.7
	8A	4.7	4.7
	7B	4.6	4.5
	7A	4.0	4.0
	6B	0.0	0.0
	6A	0.0	0.0
	5B	0.0	0.0
	5A	0.0	0.0



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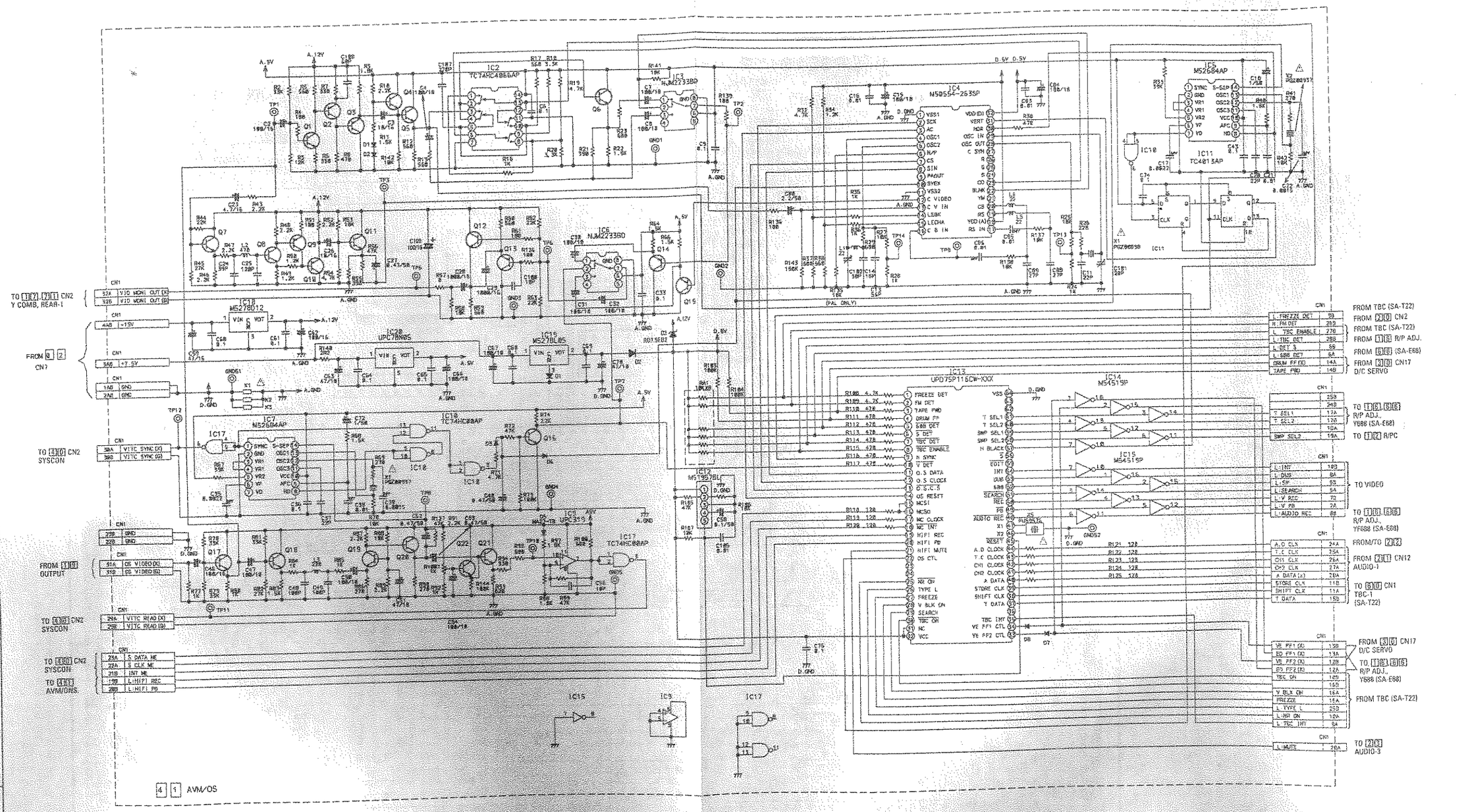
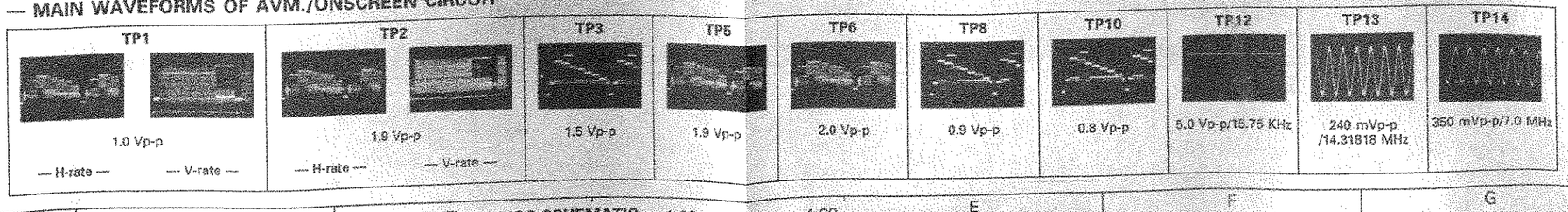
4.55 AV MICOM/ON SCREEN SCHEMATIC DIAGRAM



— MAIN WAVEFORMS OF AVM./ONSCREEN CIRCUIT —



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— DC Voltage —

SYMBOL No.		REC	PB
INTEGRATED CIRCUIT			
IC2	1	—	2.2
	2	—	2.5
	3	—	2.5
	4	—	2.5
	5	—	4.7
	6	—	0.3
	7	—	0.0
	8	—	2.2
	9	—	5.0
	10	—	4.6
	11	—	0.2
	12	—	0.2
	13	—	5.1
	14	—	5.1
IC3	1	—	3.1
	2	—	3.1
	3	—	0.0
	4	—	0.0
	5	—	0.0
	6	—	5.3
	7	—	5.3
	8	—	0.0
IC4	1	—	0.0
	2	—	5.1
	3	—	5.1
	4	—	5.1
	5	—	5.1
	6	—	5.1
	7	—	5.1
	8	—	5.1
	9	—	5.1
	10	—	5.1
	11	—	5.1
	12	—	5.1
	13	—	5.1
	14	—	5.1
	15	—	0.0
	16	—	0.0
	17	—	0.7
	18	—	1.9
	19	—	0.7
	20	—	0.0
	21	—	0.0
	22	—	0.0
	23	—	0.0
	24	—	0.2
	25	—	0.2
	26	—	4.9
	27	—	4.9
	28	—	2.1
	29	—	5.1
	30	—	5.1
	31	—	5.1
	32	—	5.1
IC5	1	—	1.1
	2	—	0.1
	3	—	1.1
	4	—	5.1
	5	—	0.3
	6	—	4.3
	7	—	4.1
	8	—	5.1
	9	—	5.1
	10	—	5.1
	11	—	5.1
	12	—	5.1
	13	—	3.5
	14	—	3.5
IC6	1	—	3.1
	2	—	3.1
	3	—	0.0
	4	—	0.0
	5	—	0.0
	6	—	5.3
	7	—	5.3
	8	—	0.0
IC7	1	—	1.1
	2	—	0.1
	3	—	1.1
	4	—	5.1
	5	—	0.3
	6	—	4.3
	7	—	4.3

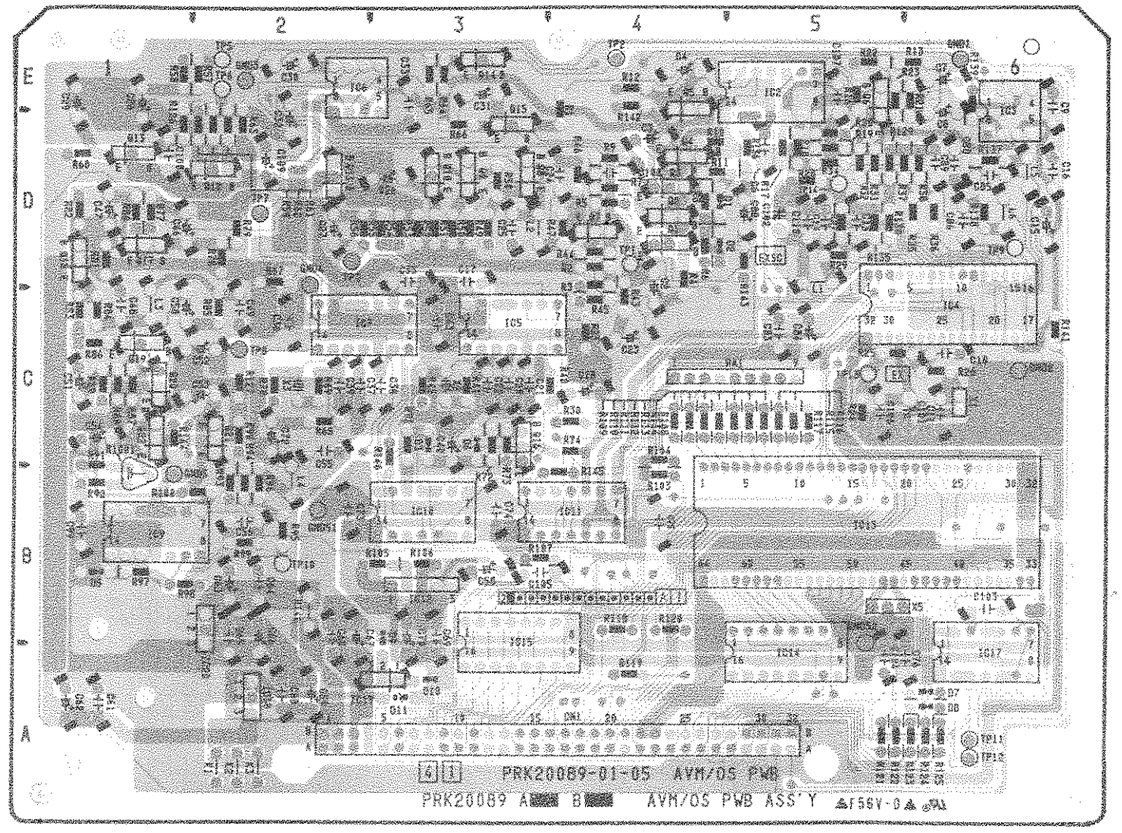
SYMBOL No.		REC	PB
IC7	8	—	4.0
	9	—	2.7
	10	—	5.1
	11	—	5.1
	12	—	5.1
	13	—	5.0
	14	—	3.3
IC9	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
	5	—	0.0
	6	—	0.0
	7	—	0.25
	8	—	1.2
	9	—	5.1
	10	—	0.0
	11	—	0.0
	12	—	0.0
	13	—	0.0
	14	—	0.0
IC10	1	—	4.8
	2	—	4.8
	3	—	0.3
	4	—	4.3
	5	—	4.3
	6	—	0.0
	7	—	0.0
	8	—	6.4
	9	—	4.0
	10	—	4.0
	11	—	4.8
	12	—	0.4
	13	—	4.1
	14	—	5.1
IC11	1	—	0.0
	2	—	5.1
	3	—	0.2
	4	—	0.0
	5	—	5.1
	6	—	0.0
	7	—	0.0
	8	—	0.0
	9	—	0.0
	10	—	0.0
	11	—	0.1
	12	—	5.1
	13	—	0.0
	14	—	5.1
IC12	1	—	5.1
	2	—	1.4
	3	—	0.0
	4	—	1.9
	5	—	5.1
IC13	1	—	5.0
	2	—	5.0
	3	—	5.1
	4	—	5.1
	5	—	5.1
	6	—	0.3
	7	—	0.3
	8	—	4.2
	9	—	4.1
	10	—	0.3
	11	—	5.1
	12	—	5.1
	13	—	5.1
	14	—	5.1
	15	—	0.0
	16	—	0.0
	17	—	0.7
	18	—	0.9
	19	—	5.1
	20	—	5.0
	21	—	0.0
	22	—	0.0
	23	—	0.0
	24	—	0.7
	25	—	0.9
	26	—	5.1
	27	—	5.0
	28	—	0.0
	29	—	5.1
	30	—	5.1
	31	—	5.1

SYMBOL No.		REC	PB
IC18	32	—	5.1
	33	—	0.0
	34	—	0.9
	35	—	0.2
	36	—	0.3
	37	—	5.1
	38	—	5.1
	39	—	0.9
	40	—	0.9
	41	—	0.9
	42	—	0.9
	43	—	0.9
	44	—	0.9
	45	—	5.1
	46	—	5.0
	47	—	2.8
	48	—	0.9
	49	—	0.9
	50	—	0.9
	51	—	0.9
	52	—	5.1
	53	—	0.9
	54	—	0.9
	55	—	0.9
	56	—	0.9
	57	—	0.9
	58	—	0.9
	59	—	0.9
	60	—	0.9
	61	—	0.9
	62	—	0.9
	63	—	0.9
	64	—	0.9
IC14	1	—	0.9
	2	—	0.9
	3	—	5.1
	4	—	0.9
	5	—	5.1
	6	—	4.6
	7	—	4.6
	8	—	4.6
	9	—	0.0
	10	—	5.1
	11	—	5.0
	12	—	4.6
	13	—	4.6
	14	—	0.0
	15	—	0.0
	16	—	0.0
IC15	1	—	0.9
	2	—	5.1
	3	—	0.9
	4	—	0.9
	5	—	0.9
	6	—	0.9
	7	—	0.9
	8	—	0.0
	9	—	0.0
	10	—	0.0
	11	—	0.0
	12	—	4.9
	13	—	4.9
	14	—	4.7
	15	—	0.7
	16	—	4.5
IC17	1	—	8.4
	2	—	8.4
	3	—	1.4
	4	—	4.1
	5	—	4.1
	6	—	0.0
	7	—	5.1
	8	—	5.1
	9	—	0.0
	10	—	5.1
	11	—	0.0
	12	—	0.0
	13	—	0.9
	14	—	5.1
IC18	1	—	15.1
	2	—	8.0
	3	—	12.0
IC19	1	—	8.1
	2	—	0.4
	3	—	7.4

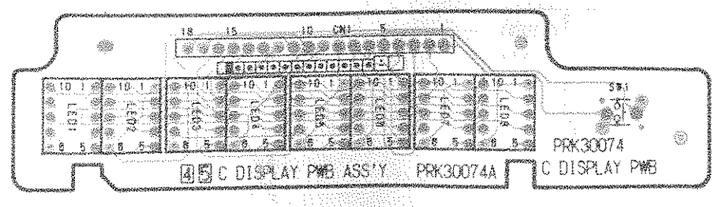
SYMBOL No.		REC	PB
IC20	1	—	7.2
	2	—	0.0
	3	—	5.1
TRANSISTOR			
Q1	B	—	1.9
	C	—	8.2
	E	—	2.3
Q2	B	—	8.2
	C	—	4.6
	E	—	8.9
Q3	B	—	4.6
	C	—	0.0
	E	—	5.2
Q4	B	—	2.8
	C	—	5.1
	E	—	3.2
Q5	B	—	8.2
	C	—	5.2
	E	—	2.5
Q6	B	—	2.5
	C	—	2.1
	E	—	1.9
Q7	B	—	6.4
	C	—	12.0
	E	—	5.8
Q8	B	—	5.8
	C	—	11.0
	E	—	5.2
Q9	B	—	11.9
	C	—	9.9
	E	—	11.7
Q10	B	—	9.8
	C	—	0.0
	E	—	10.2
Q11	B	—	2.5
	C	—	12.0
	E	—	1.8
Q12	B	—	8.9
	C	—	12.0
	E	—	9.3
Q13	B	—	8.9
	C	—	0.0
	E	—	8.7
Q14	B	—	2.3
	C	—	0.0
	E	—	3.0
Q15	B	—	1.0
	C	—	0.0
	E	—	1.7
Q16	B	—	0.7
	C	—	0.0
	E	—	0.0
Q17	B	—	2.5
	C	—	5.1
	E	—	1.8
Q18	B	—	2.3
	C	—	5.1
	E	—	1.6
Q19	B	—	1.0
	C	—	2.7
	E	—	0.3
Q20	B	—	2.7
	C	—	5.1
	E	—	2.1
Q21	B	—	1.8
	C	—	5.1
	E	—	1.2

SYMBOL No.		REC	PB
CONNECTOR			
CN1	32A	—	0.0
	32B	—	0.0
	4AB	—	15.1
	3AB	—	7.4
	1AB	—	0.8
	2AB	—	0.0
	30A	—	4.7
	30B	—	0.0
	22B	—	0.0
	22B	—	0.0
	31A	—	0.0
	31B	—	0.0
	28A	—	1.8
	28B	—	0.0
	23A	—	0.3
	27A	—	4.1
	21B	—	4.1
	10B	—	4.7
	20B	—	12.0
	9B	—	5.0
	25B	—	5.1
	27B	—	4.2
	26B	—	0.0
	6B	—	5.2
	6A	—	0.0
	14A	—	5.1
	14B	—	5.0
	25B	—	0.9
	24B	—	0.0
	17B	—	4.6
	17A	—	4.6
	18A	—	6.6
	19A	—	5.8
	10A	—	0.7
	9A	—	4.5
	9B	—	0.7
	7A	—	4.8
	7B	—	4.9
	8B	—	4.7
	24A	—	0.0
	23A	—	0.6
	26A	—	0.9
	28A	—	0.9
	28B	—	0.9
	11B	—	5.1
	11A	—	5.1
	15B	—	5.1
	13B	—	5.1
	13A	—	5.1
	12B	—	0.0
	12A	—	5.1
	16B	—	0.6
	16B	—	0.6
	16A	—	0.9
	15A	—	0.6
	22A	—	0.6
	22B	—	0.6
	10A	—	0.6
	5A	—	0.2
	20A	—	0.7

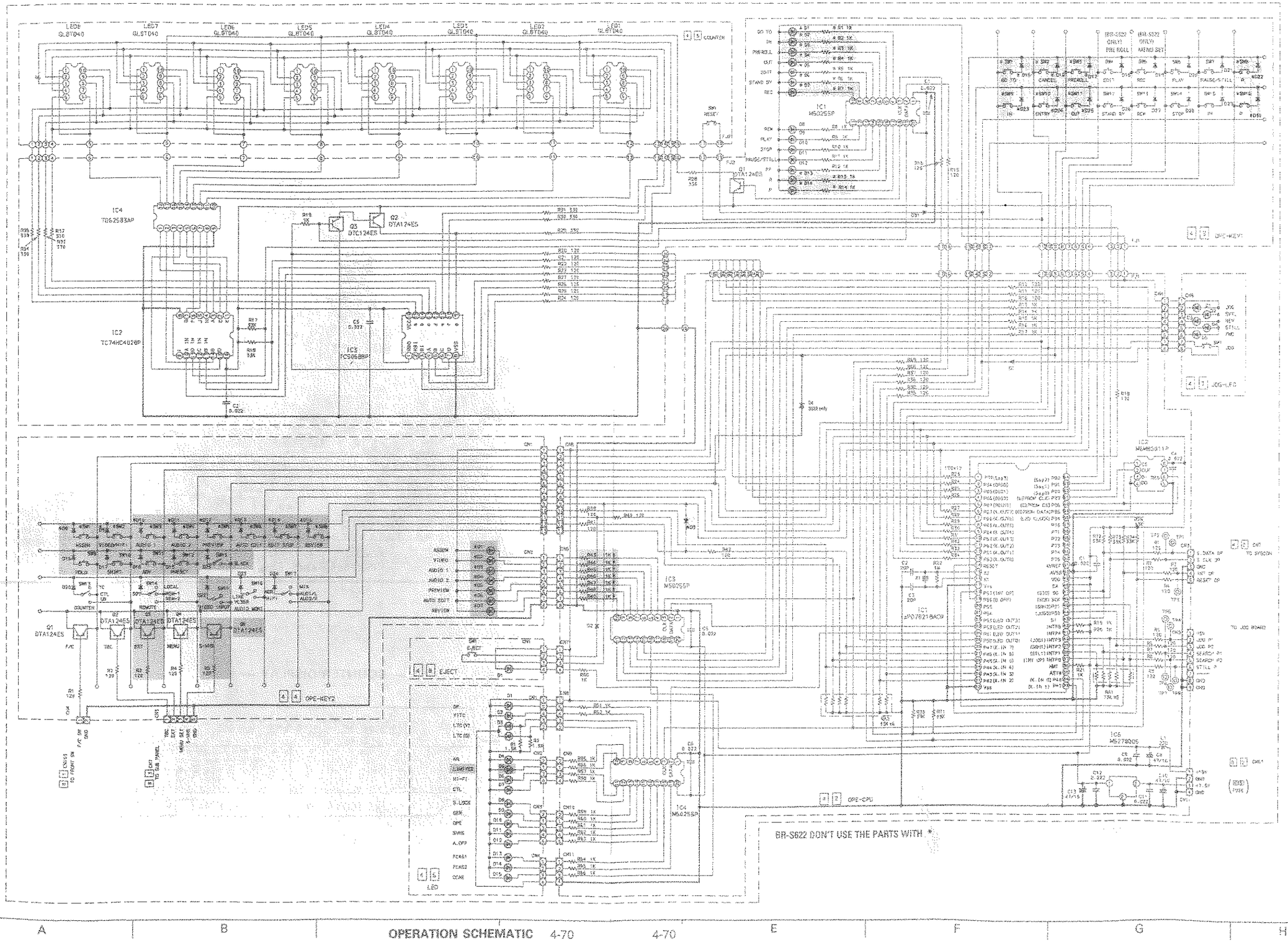
— AV MICOM/ONSCREEN —



— COUNTER DISPLAY —



4.57 OPERATION SCHEMATIC DIAGRAM

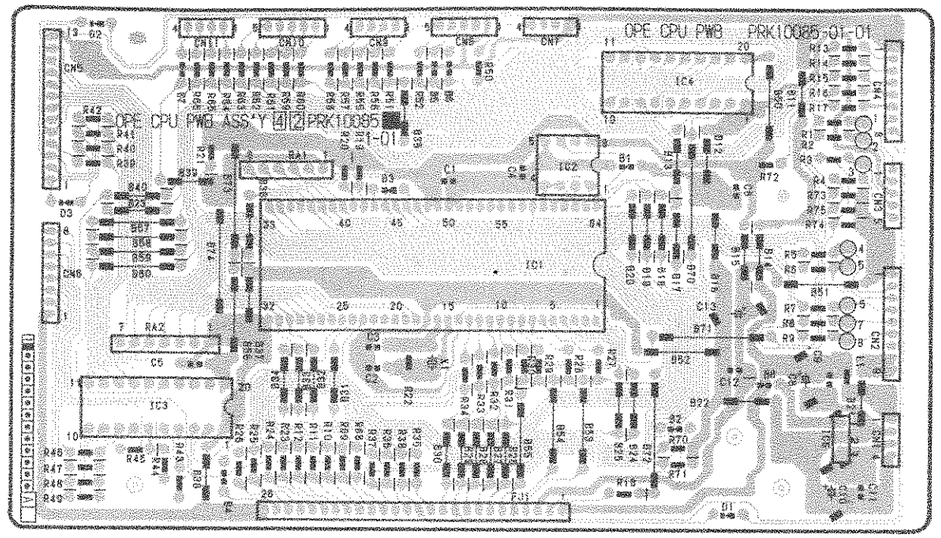


4.58 OPERATION CIRCUIT BOARD

— DC voltage —

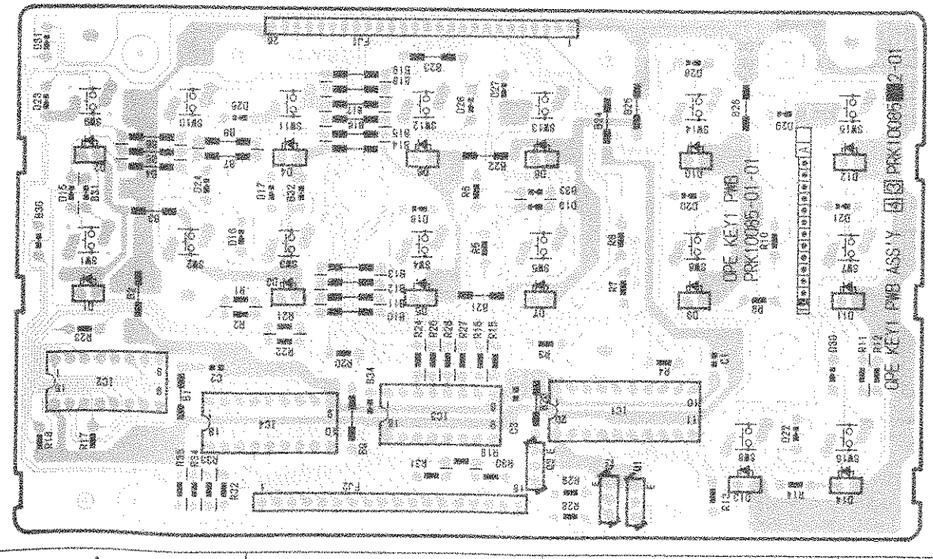
SYMBOL	No.	REC	PB
INTEGRATED CIRCUIT			
IC1	1	—	0.1
	2	—	0.1
	3	—	2.5
	4	—	2.5
	5	—	5.0
	6	—	5.0
	7	—	5.0
	8	—	5.0
	9	—	0.0
	10	—	0.0
	11	—	0.0
	12	—	0.0
	13	—	0.0
	14	—	0.0
	15	—	5.0
	16	—	5.0
	17	—	4.9
	18	—	0.0
	19	—	0.0
	20	—	0.0
	21	—	0.0
	22	—	0.0
	23	—	0.0
	24	—	0.0
	25	—	0.0
	26	—	0.0
	27	—	0.0
	28	—	0.0
	29	—	0.0
	30	—	0.0
	31	—	0.0
	32	—	0.0
	33	—	0.0
	34	—	0.0
	35	—	0.0
	36	—	0.0
	37	—	0.0
	38	—	0.0
	39	—	0.0
	40	—	0.0
	41	—	5.1
	42	—	5.1
	43	—	0.0
	44	—	0.0
	45	—	5.0
	46	—	4.9
	47	—	5.1
	48	—	5.1
	49	—	0.0
	50	—	0.0
	51	—	0.0
	52	—	0.0
	53	—	0.0
	54	—	0.1
	55	—	0.1
IC4	17	—	13.5
	18	—	13.5
	19	—	13.5
	20	—	13.5
IC6	1	—	5.0
	3	—	5.0
CONNECTOR			
CN1	1	—	0.0
	2	—	0.0
	4	—	0.0
CN2	1	—	15.0
	2	—	0.0
	3	—	0.0
	4	—	5.0
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	-0.1
CN3	1	—	1.3
	3	—	4.0
	4	—	4.0
	5	—	5.0
CN4	1	—	15.0
	2	—	0.0
	3	—	4.0
	4	—	4.0
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	0.1
CN5	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	0.0
	9	—	0.0
	10	—	0.0
	11	—	0.0
	12	—	15.0
CN6	1	—	0.0
CN7	1	—	14.9
	2	—	-0.3
	3	—	0.0
	4	—	13.5
CN8	1	—	14.9
	2	—	0.0
	4	—	13.5
	5	—	13.5
CN9	1	—	13.4
	3	—	13.4
	4	—	13.4
CN10	1	—	13.5
	3	—	13.4
	4	—	13.4
CN11	1	—	12.9
	3	—	12.9
	4	—	0.0
CN6	1	—	0.0
	2	—	0.0

— OPERATION CPU —

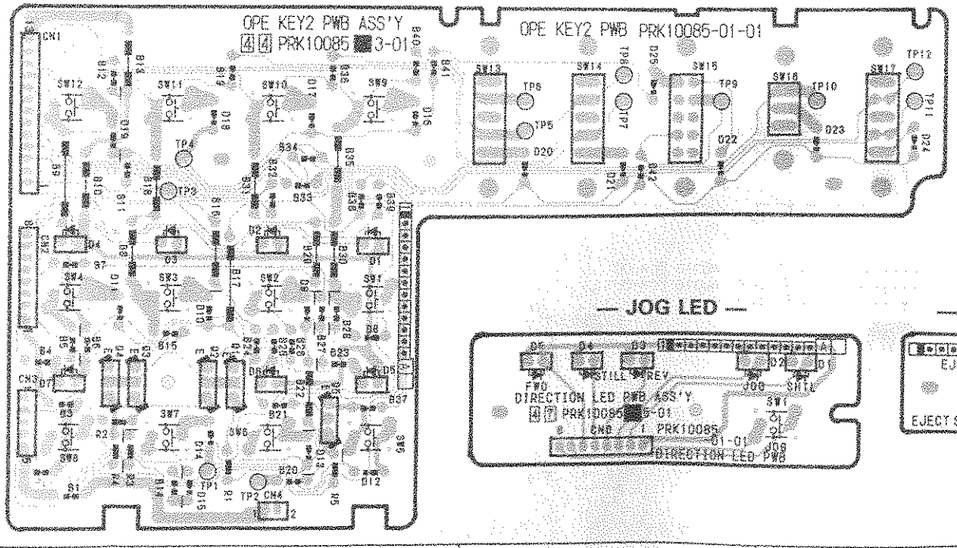


— MAIN LED —

— OPERATION KEY-1 —

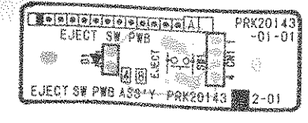


— OPERATION KEY-2 —

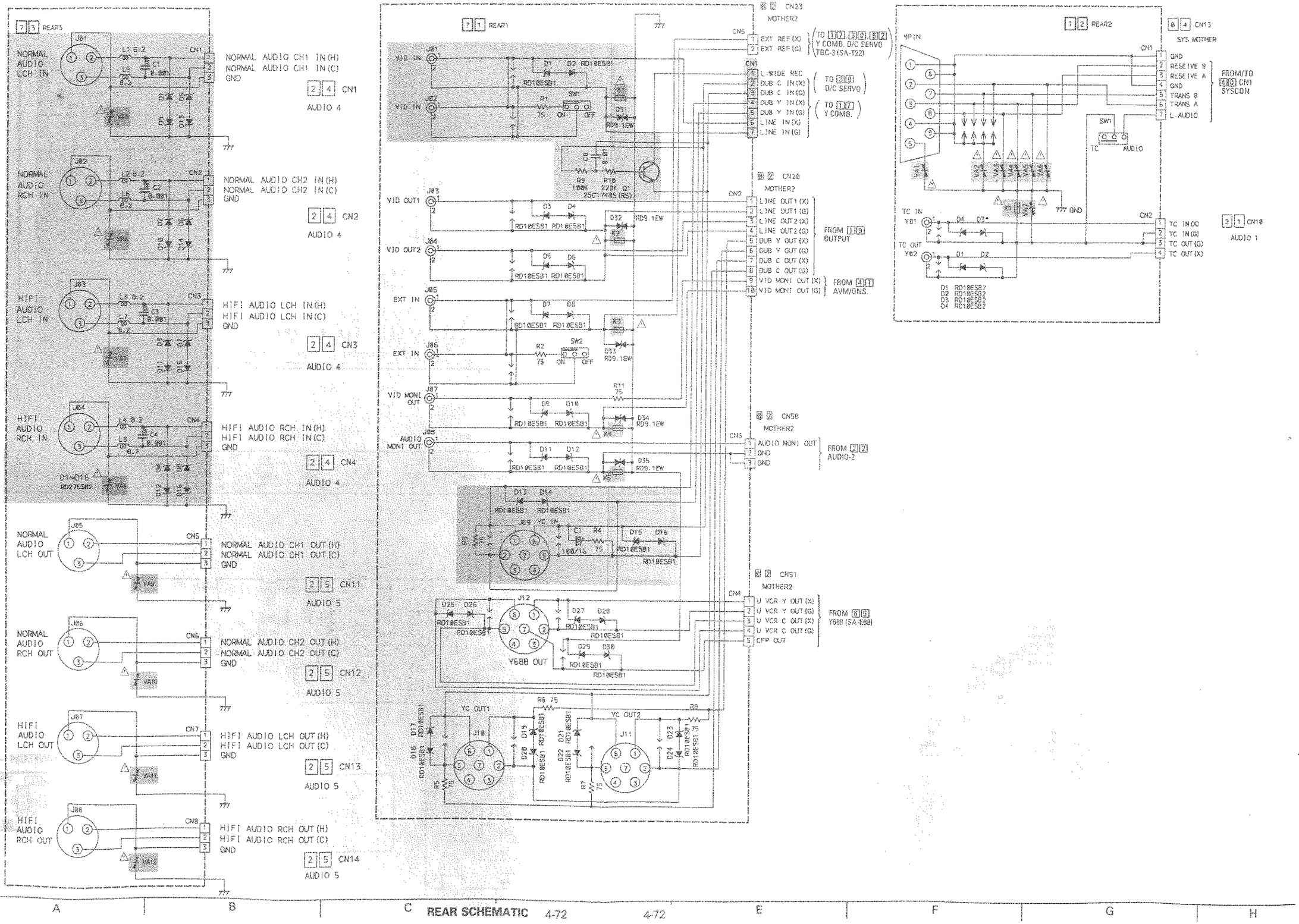


— JOG LED —

— EJECT SWITCH —

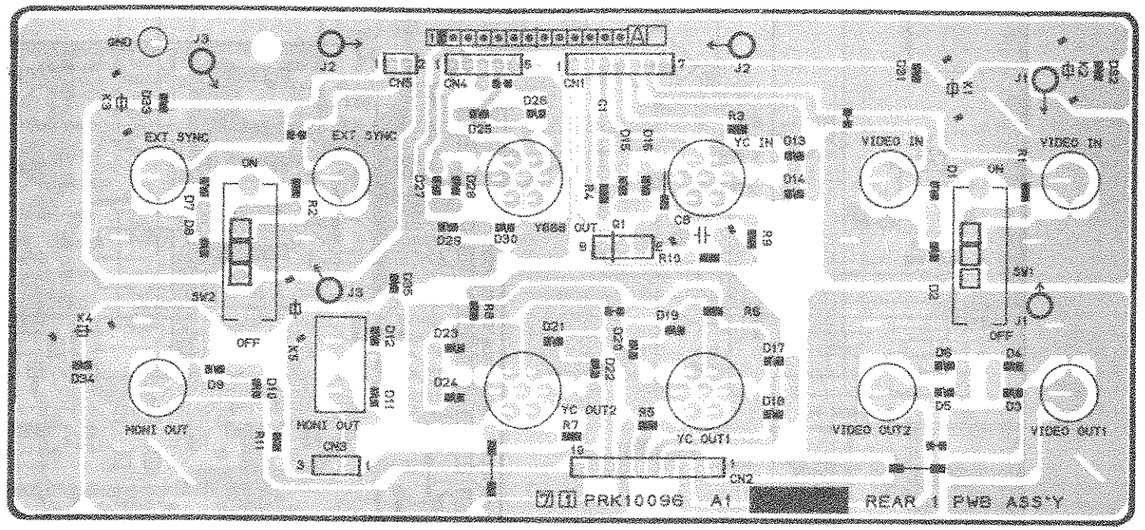


4.59 REAR (REAR-1 to -3) SCHEMATIC DIAGRAM

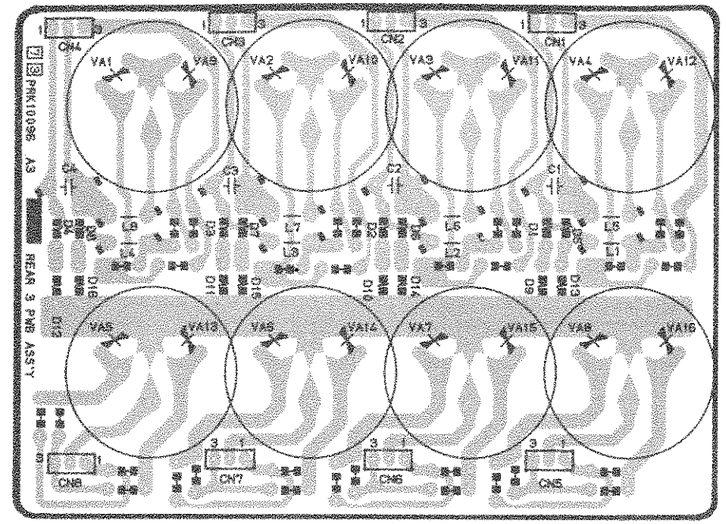


4.60 REAR (REAR-1 to -4) CIRCUIT BOARD

— REAR-1 —



— REAR-3 —



— DC voltage —

REAR 1 <71>

SYMBOL No.		REC	PB
TRANSISTOR			
Q1	B	—	0.1
	C	—	5.1
	E	—	0.0
CONNECTOR			
CN1	1	—	5.1
	2	—	5.1
	3	—	0.0
	4	—	0.0
	5	—	0.0
	6	—	0.0
	7	—	0.0
CN2	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0
	5	—	0.0
	6	—	0.0
	7	—	0.0
	8	—	0.0
	9	—	0.0
	10	—	0.0
CN3	1	—	0.0
	2	—	0.0
	3	—	0.0
CN4	1	—	5.3
	2	—	0.0
	3	—	5.8
	4	—	0.0
	5	—	0.0
CN5	1	—	0.0
	2	—	0.0

REAR 2 <72>

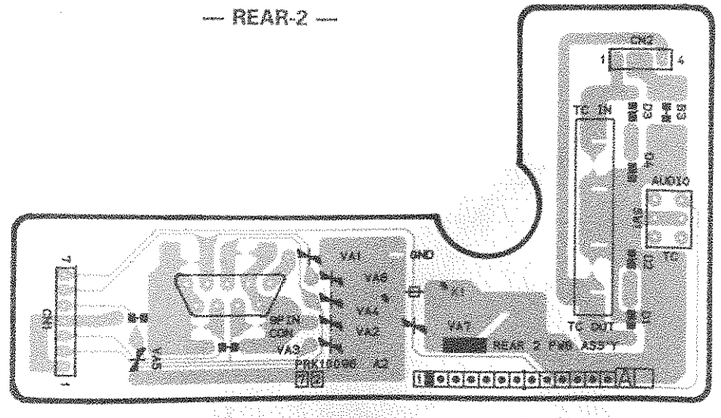
SYMBOL No.		REC	PB
CONNECTOR			
CN1	1	—	0.0
	2	—	2.5
	3	—	2.5
	4	—	0.0
	5	—	5.3
	6	—	0.4
	7	—	0.0
CN2	1	—	0.0
	2	—	0.0
	3	—	0.0
	4	—	0.0

SYMBOL No.		REC	PB
CONNECTOR			
CN6	1	—	0.0
	2	—	0.0
	3	—	0.0
CN7	1	—	0.0
	2	—	0.0
	3	—	0.0
CN8	1	—	0.0
	2	—	0.0
	3	—	0.0

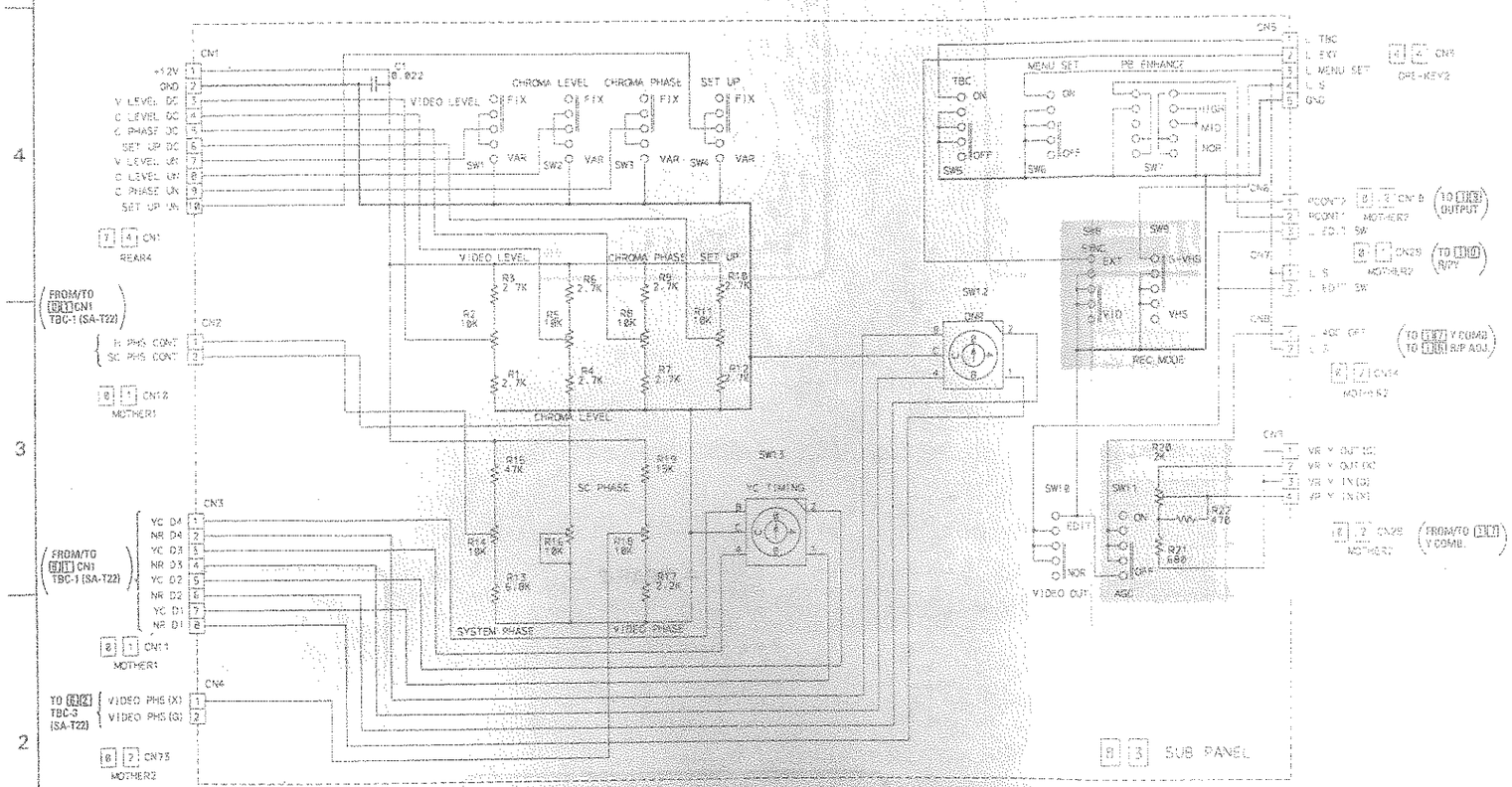
REAR 3 <73>

SYMBOL No.		REC	PB
CONNECTOR			
CN1	1	—	0.0
	2	—	0.0
	3	—	0.0
CN2	1	—	0.0
	2	—	0.0
	3	—	0.0
CN3	1	—	0.0
	2	—	0.0
	3	—	0.0
CN4	1	—	0.0
	2	—	0.0
	3	—	0.0
CN5	1	—	0.0
	2	—	0.0
	3	—	0.0

— REAR-2 —

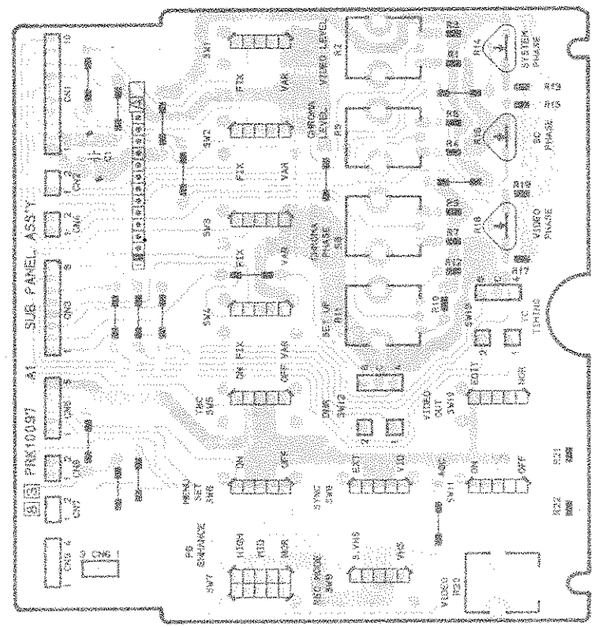


4.61 SUBPANEL SCHEMATIC DIAGRAM



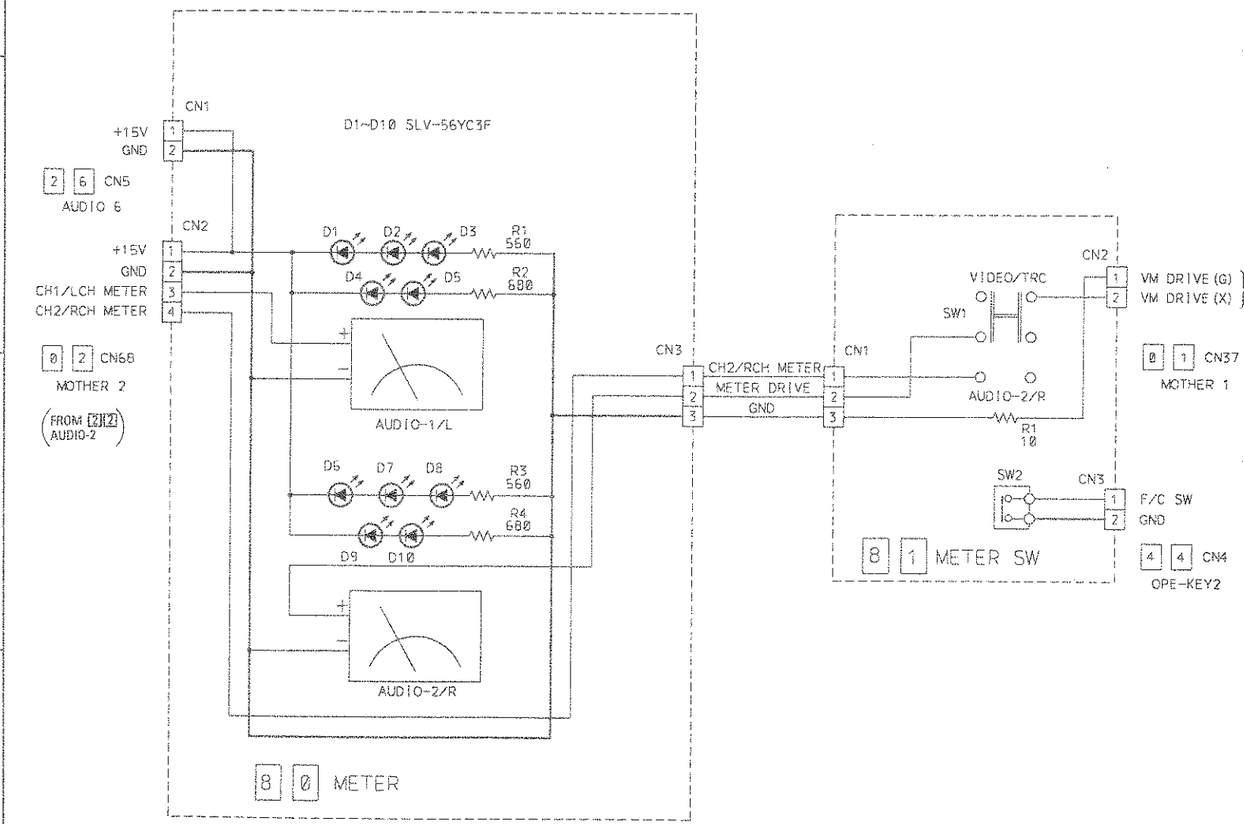
4.62 SUBPANEL CIRCUIT BOARD

— SUBPANEL —

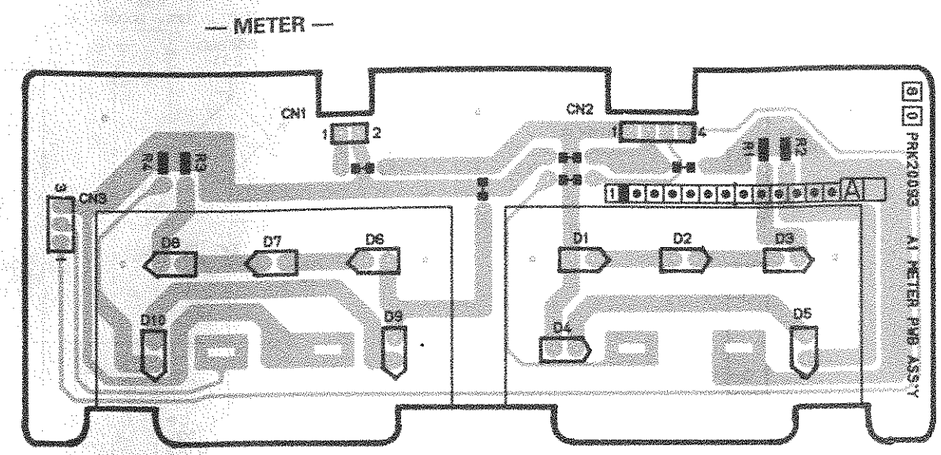


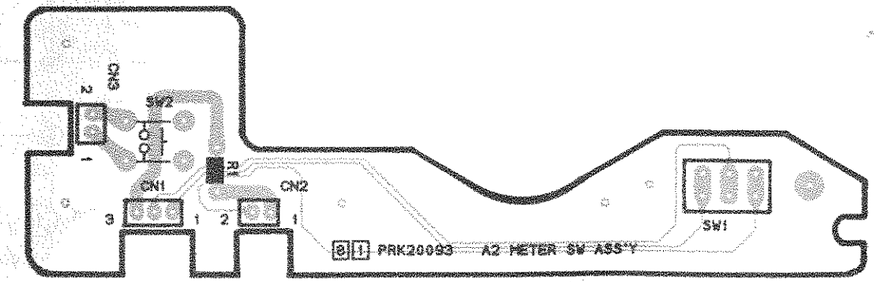
— TP TERMINAL —

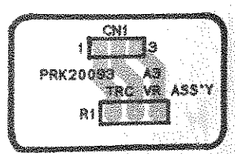
4.63 METER SCHEMATIC DIAGRAM



4.64 METER CIRCUIT BOARD

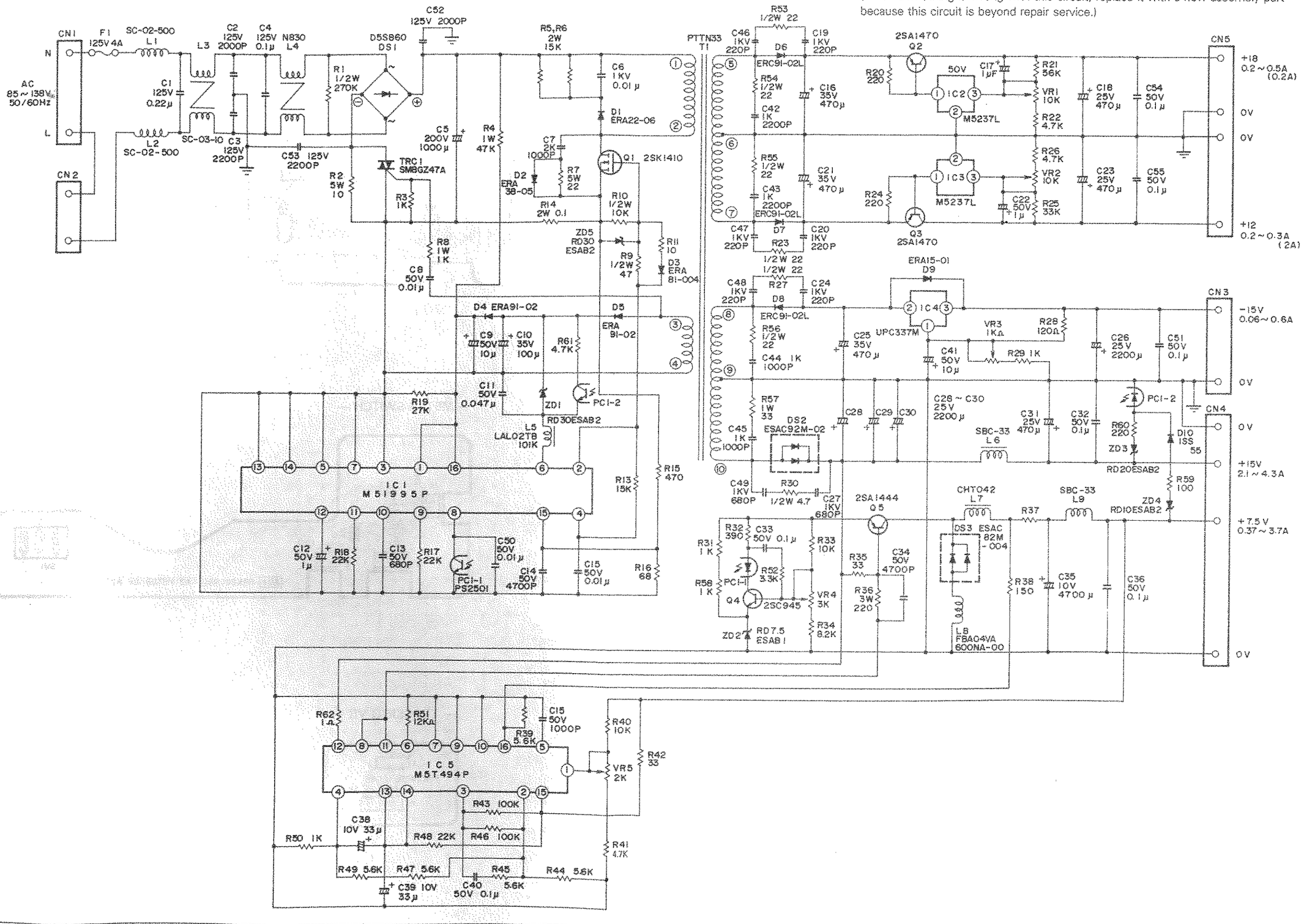






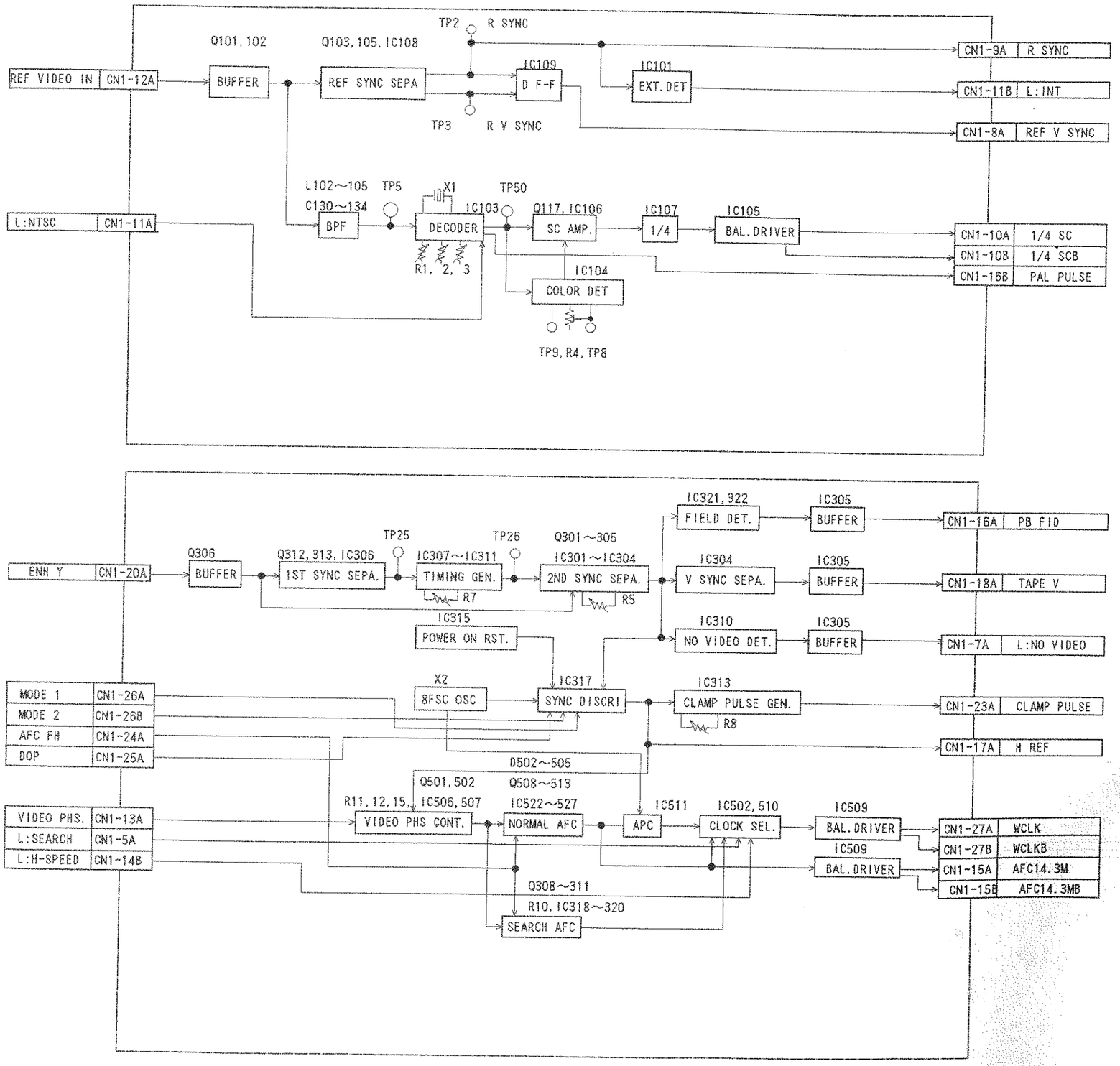
4.65 SWITCHING REGULATOR SCHEMATIC DIAGRAM

(When something is wrong with this circuit, replace it with a new assembly part because this circuit is beyond repair service.)



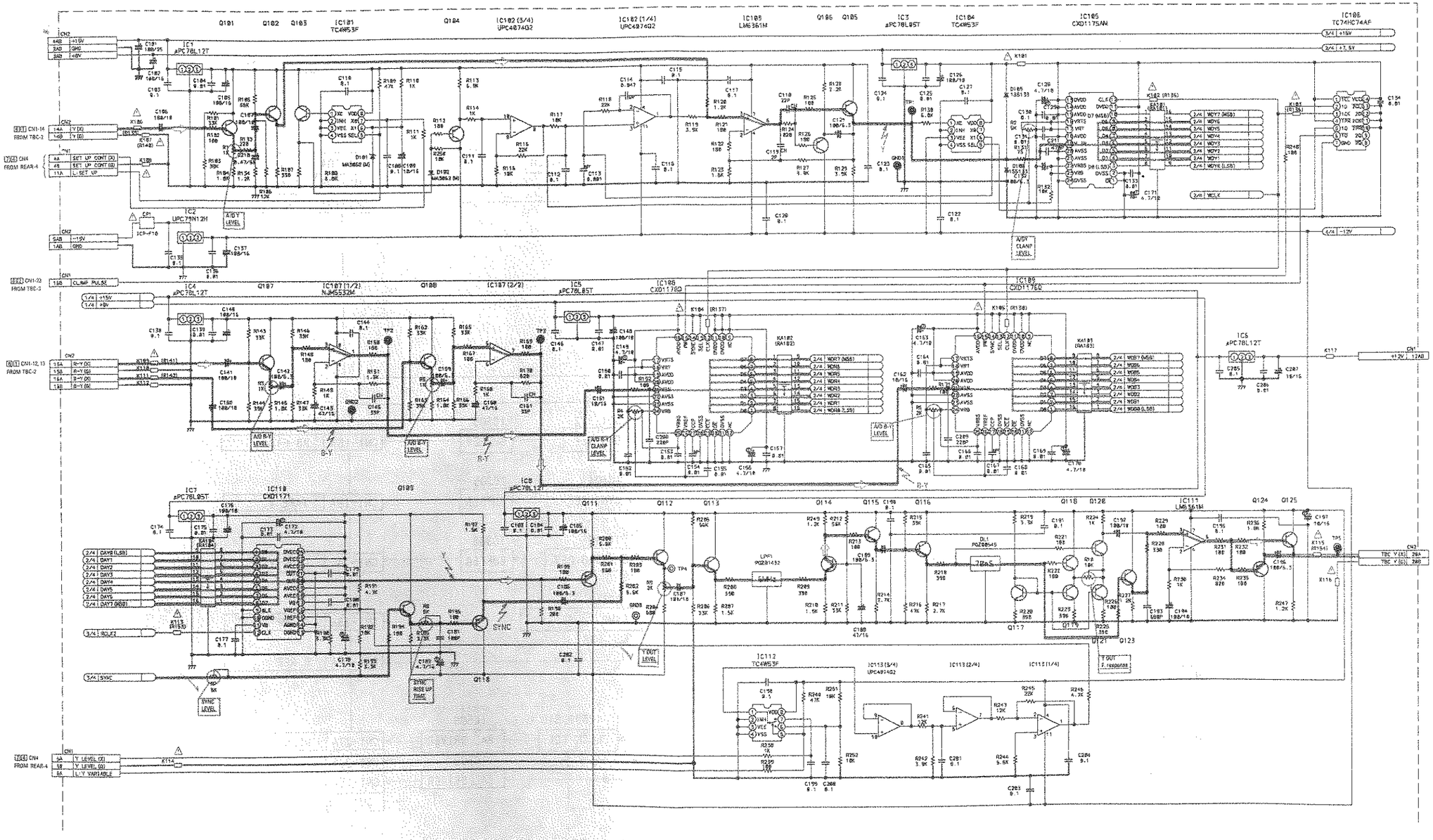
SW. REGULATOR SCHEMATIC 4-76 4-76

8.8 TBC-3 BLOCK DIAGRAM



8.9 TBC-1 SCHEMATIC DIAGRAM

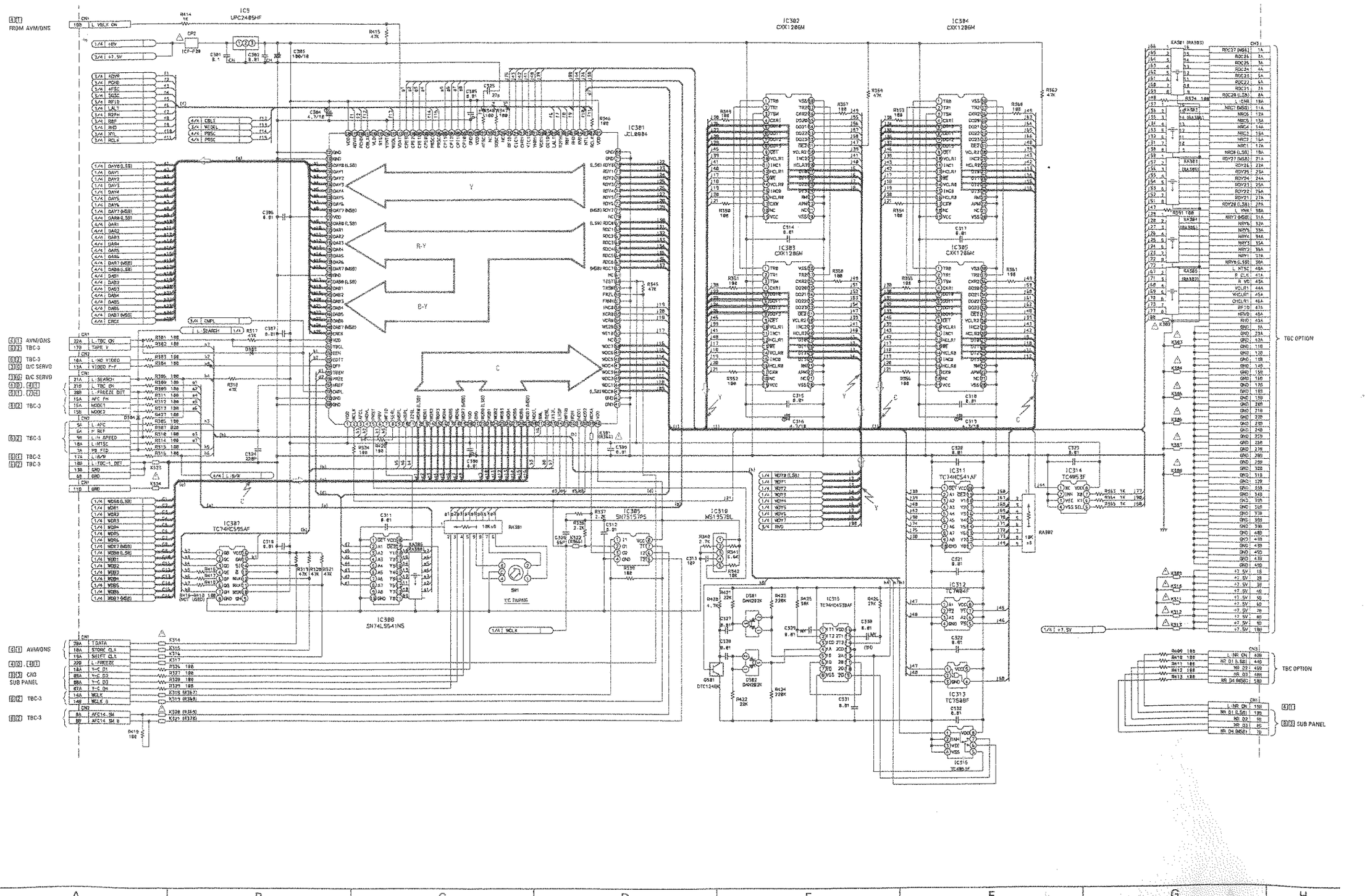
— SCHEMATIC DIAGRAM (1/4) —



A B C D E F G H

6 5 4 3 2 1

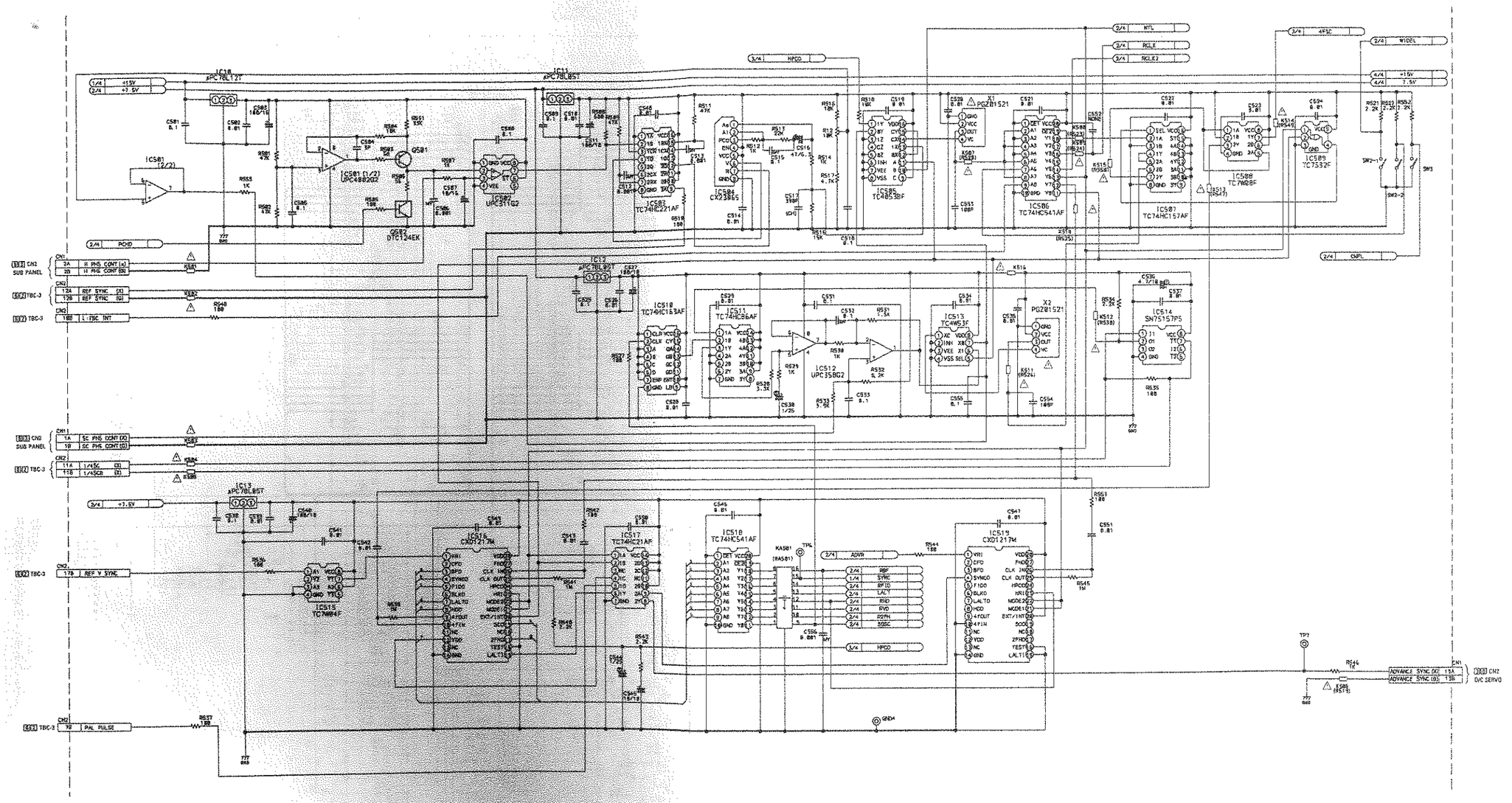
— SCHEMATIC DIAGRAM (2/4) —



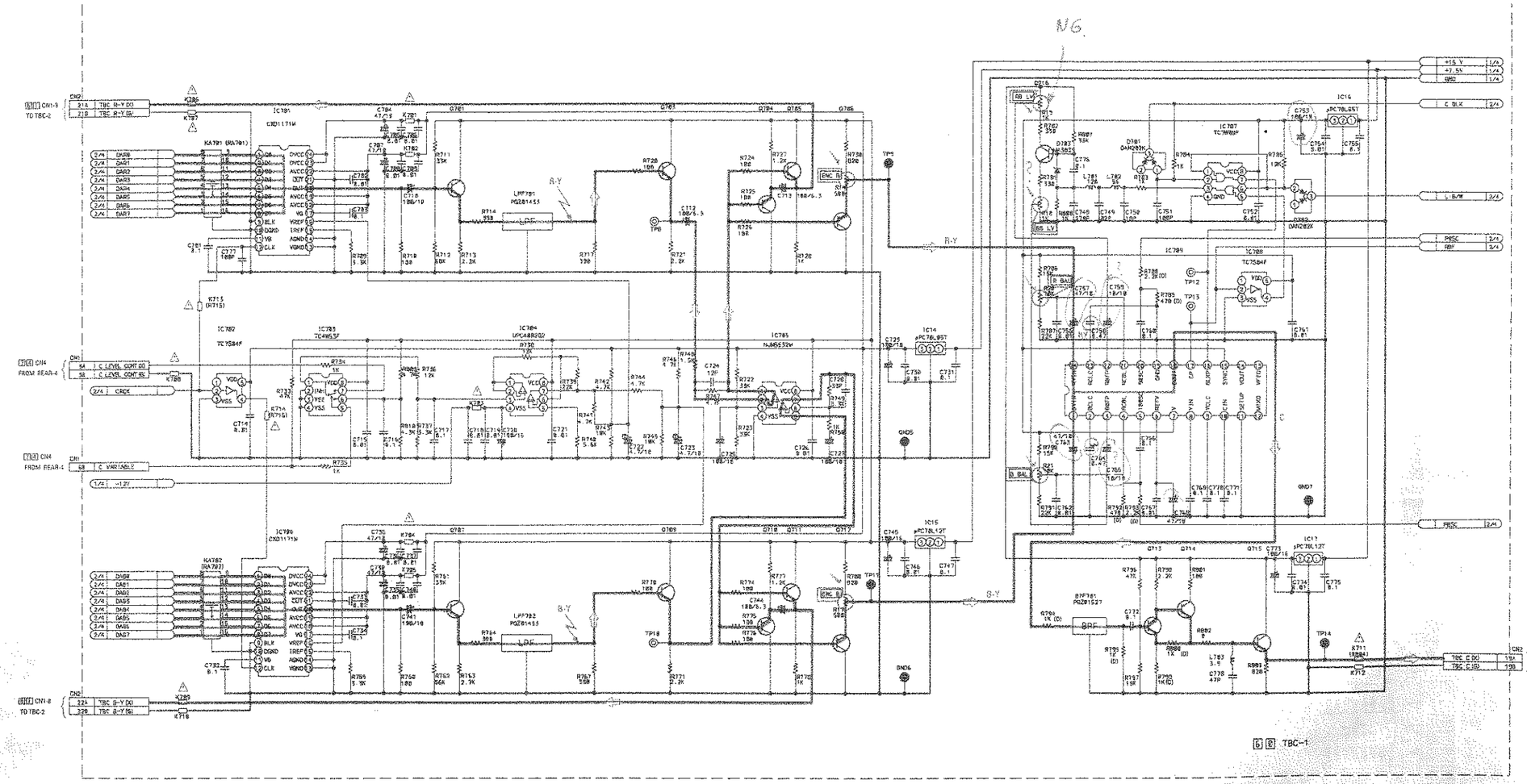
A B C D E F G H

1 2 3 4 5 6

— SCHEMATIC DIAGRAM (3/4) —



— SCHEMATIC DIAGRAM (4/4) —



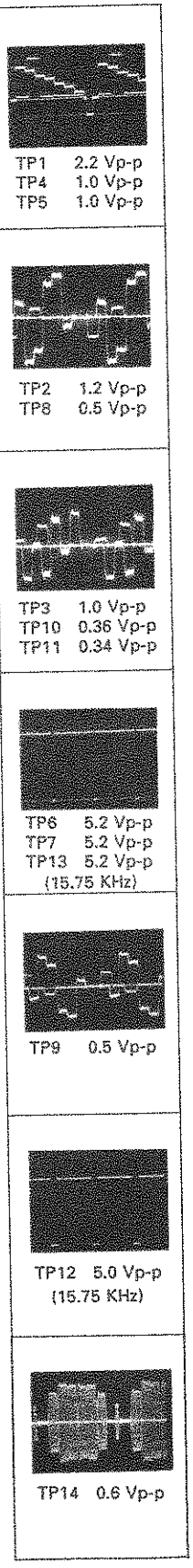
— TBC-1 <60> DC voltage (1/2) —

SYMBOL No.		PB
I C		
IC1	1	15.1
	2	0.0
	3	12.4
IC2	1	0.0
	2	-15.1
	3	-11.9
IC3	1	7.6
	2	0.0
	3	5.1
IC4	1	15.2
	2	0.0
	3	12.1
IC5	1	7.5
	2	0.0
	3	5.1
IC6	1	15.2
	2	0.0
	3	12.0
IC7	1	7.5
	2	0.0
	3	5.1
IC8	1	15.2
	2	0.0
	3	12.0
IC10	1	15.1
	2	0.0
	3	12.0
IC11	1	7.5
	2	0.0
	3	5.1
IC12	1	7.5
	2	0.0
	3	5.0
IC13	1	7.5
	2	0.0
	3	5.1
IC14	1	7.5
	2	0.0
	3	5.1
IC15	1	15.1
	2	0.0
	3	11.8
IC16	1	7.5
	2	0.0
	3	5.1
IC17	1	15.0
	2	0.0
	3	11.9
IC101	1	6.3
	2	6.0
	3	0.0
	4	0.0
	5	12.4
	6	6.3
	7	4.9
	8	12.4
IC102	1	-2.8
	2	0.8
	3	0.8
	4	-11.9
	5	0.1
	6	0.3
	7	0.3
	8	12.4
IC103	1	-11.3
	2	0.4
	3	0.4
	4	-11.3
	5	0.0
	6	1.8

SYMBOL No.		PB
IC103	7	12.4
	8	-11.3
IC104	1	1.2
	2	0.0
	3	-11.9
	4	0.0
	5	0.8
	6	0.3
	7	1.5
	8	5.1
IC105	1	0.0
	2	0.0
	3	2.3
	4	2.3
	5	2.3
	6	2.3
	7	2.3
	8	2.3
	9	2.3
	10	2.3
	11	2.3
	12	2.3
	13	2.3
	14	2.3
	15	2.3
	16	2.3
	17	2.3
	18	2.3
	19	2.3
	20	0.0
	21	0.0
	22	0.7
	23	0.7
	24	0.0
IC106	1	5.0
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	5.1
IC107	1	6.1
	2	6.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	12.1
IC108	1	2.5
	2	2.1
	3	2.1
	4	2.1
	5	2.1
	6	2.1
	7	2.1
	8	2.1
	9	2.1
	10	2.1
	11	2.1
	12	2.1
	13	2.1
	14	2.1
	15	2.1
	16	2.1
	17	2.1
	18	2.1
	19	2.1
	20	2.1
	21	2.1
	22	2.1
	23	2.1
	24	2.1
	25	2.1
	26	2.1
	27	2.1
	28	0.0

SYMBOL No.		PB
IC108	29	0.0
	30	0.0
	31	0.0
	32	0.0
IC109	1	2.5
	2	2.1
	3	2.1
	4	2.1
	5	2.1
	6	2.1
	7	2.1
	8	2.1
	9	2.1
	10	2.1
	11	2.1
	12	2.1
	13	2.1
	14	2.1
	15	2.1
	16	2.1
	17	2.1
	18	2.1
	19	2.1
	20	2.1
	21	2.1
	22	2.1
	23	2.1
	24	2.1
	25	2.1
	26	2.1
	27	2.1
	28	0.0
	29	0.0
	30	0.0
	31	0.0
	32	0.0
IC110	1	9.9
	2	9.9
	3	9.9
	4	9.9
	5	9.9
	6	9.9
	7	9.9
	8	9.9
	9	9.9
	10	9.9
	11	9.9
	12	9.9
	13	9.9
	14	9.9
	15	9.9
	16	9.9
	17	9.9
	18	9.9
	19	9.9
	20	9.9
	21	9.9
	22	9.9
	23	9.9
	24	5.1
IC111	1	0.6
	2	5.0
	3	5.0
	4	5.0
	5	5.0
	6	5.0
	7	5.0
	8	11.6
IC112	1	0.2
	2	0.0
	3	0.0
	4	0.0
	5	11.4
	6	9.9
	7	9.7
	8	12.0
IC113	1	1.3
	2	1.3
	3	1.3
	4	1.3
	5	1.3
	6	-1.0
	7	0.0
	8	-12.0

SYMBOL No.		PB
IC501	1	5.4
	2	6.0
	3	6.0
	4	0.0
	5	0.0
	6	11.5
	7	11.5
	8	11.9
IC502	1	0.0
	2	1.3
	3	2.4
	4	0.0
	5	0.0
	6	0.0
	7	1.5
	8	11.9
IC503	1	0.0
	2	5.1
	3	5.1
	4	0.0
	5	0.0
	6	5.1
	7	0.0
	8	5.1
	9	5.1
	10	5.1
	11	5.1
	12	5.1
	13	5.4
	14	0.0
	15	3.0
	16	5.1
IC504	1	0.5
	2	3.4
	3	4.2
	4	5.1
	5	5.1
	6	5.0
	7	5.0
	8	0.0
IC505	1	0.0
	2	3.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	5.0
	11	0.0
	12	0.0
	13	5.0
	14	5.0
	15	5.0
	16	5.1
IC506	1	0.0
	2	5.0
	3	5.0
	4	5.0
	5	5.0
	6	5.0
	7	5.0
	8	5.0
	9	5.0
	10	5.0
	11	5.0
	12	5.0
	13	5.0
	14	5.0
	15	5.0
	16	5.0
	17	5.0
	18	5.0
	19	5.0
	20	5.1
IC507	1	0.0
	2	5.0
	3	5.0
	4	5.0
	5	5.0
	6	5.0
	7	5.0
	8	0.0



TP1 2.2 Vp-p
TP4 1.0 Vp-p
TP5 1.0 Vp-p

TP2 1.2 Vp-p
TP8 0.5 Vp-p

TP3 1.0 Vp-p
TP10 0.36 Vp-p
TP11 0.34 Vp-p

TP6 5.2 Vp-p
TP7 5.2 Vp-p
TP13 5.2 Vp-p
(15.75 KHz)

TP9 0.5 Vp-p

TP12 5.0 Vp-p
(15.75 KHz)

TP14 0.6 Vp-p

— TBC-1 <60> DC voltage (2/2) —

SYMBOL	No.	PB
IC507	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
IC508	1	2.6
	2	2.6
	3	2.6
	4	2.6
	5	2.6
	6	2.6
	7	2.6
	8	5.1
IC509	1	.
	2	.
	3	.
	4	.
	5	.
IC510	1	5.1
	2	5.1
	3	5.1
	4	5.1
	5	5.1
	6	5.1
	7	5.1
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	5.1
	16	5.1
IC511	1	0.0
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	5.1
IC512	1	1.1
	2	1.7
	3	1.1
	4	1.1
	5	0.0
	6	0.0
	7	0.0
	8	5.1
IC513	1	3.0
	2	3.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	3.5
	8	3.5
IC514	1	2.2
	2	2.2
	3	5.0
	4	0.0
	5	0.0
	6	2.3
	7	4.7
	8	5.1
IC515	1	5.1
	2	0.0
	3	0.0
	4	0.0
	5	5.1
	6	0.0
	7	0.0

SYMBOL	No.	PB
IC515	8	5.1
IC516	1	0.0
	2	5.0
	3	4.4
	4	4.4
	5	4.3
	6	2.4
	7	2.5
	8	2.5
	9	2.5
	10	4.6
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	0.0
	21	0.0
	22	0.0
	23	0.0
	24	0.0
	25	0.0
	26	0.0
	27	0.0
	28	2.5
IC517	1	0.0
	2	0.0
	3	4.9
	4	1.0
	5	0.0
	6	4.5
	7	5.1
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	5.1
IC518	1	0.0
	2	4.4
	3	4.4
	4	4.4
	5	2.4
	6	4.4
	7	1.2
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	2.4
	14	4.2
	15	4.2
	16	2.6
	17	4.6
	18	0.0
	19	0.0
	20	0.0
IC519	1	5.1
	2	5.1
	3	4.4
	4	4.4
	5	4.3
	6	2.4
	7	2.5
	8	2.5
	9	2.5
	10	4.6
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	0.0
	21	0.0
	22	0.0
	23	4.5

SYMBOL	No.	PB
IC519	24	0.0
	25	0.0
	26	2.5
	27	2.5
	28	5.1
IC701	1	0.0
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	0.0
	21	0.0
	22	0.0
	23	0.0
	24	5.1
IC702	1	0.0
	2	0.0
	3	0.0
	4	0.0
	5	5.1
IC703	1	5.1
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	11.0
	8	12.6
IC704	1	1.3
	2	1.3
	3	1.3
	4	1.3
	5	-1.2
	6	0.0
	7	0.0
	8	0.0
IC705	1	5.9
	2	5.9
	3	5.9
	4	5.9
	5	0.0
	6	0.0
	7	0.0
	8	11.6
IC706	1	0.0
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	0.0
	21	0.0
	22	0.0
	23	0.0
	24	5.1

SYMBOL	No.	PB
IC707	1	5.1
	2	5.1
	3	5.1
	4	5.1
	5	5.1
	6	5.1
	7	5.1
	8	5.1
IC708	1	0.3
	2	4.0
	3	0.3
	4	0.3
	5	5.1
IC709	1	2.4
	2	1.2
	3	2.3
	4	2.3
	5	2.3
	6	2.3
	7	2.3
	8	2.3
	9	2.3
	10	2.3
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	4.5
	16	4.4
	17	4.4
	18	4.4
	19	0.0
	20	0.0
	21	0.0
	22	0.0
	23	0.0
	24	5.1

TRANSISTOR

SYMBOL		PB
Q101	B	6.5
	C	12.4
	E	6.0
Q102	B	2.0
	C	12.4
	E	1.4
Q103	B	6.3
	C	12.4
	E	5.7
Q104	B	0.0
	C	-11.9
	E	0.1
Q105	B	0.0
	C	0.0
	E	0.0
Q106	B	1.8
	C	-1.2
	E	2.4
Q107	B	6.4
	C	12.4
	E	5.8
Q108	B	2.4
	C	5.1
	E	1.8
Q109	B	.
	C	.
	E	.
Q110	B	1.8
	C	-12.0
	E	2.4
Q111	B	0.4
	C	-11.9
	E	1.0
Q112	B	.
	C	.
	E	.

SYMBOL		PB
Q113	B	4.2
	C	12.5
	E	3.6
Q114	B	4.2
	C	9.0
	E	3.6
Q115	B	9.2
	C	12.5
	E	8.5
Q116	B	.
	C	.
	E	.
Q117	B	1.9
	C	1.9
	E	1.3
Q118	B	8.2
	C	9.2
	E	5.5
Q119	B	1.9
	C	6.3
	E	1.3
Q120	B	6.2
	C	9.2
	E	5.5
Q121	B	1.9
	C	5.3
	E	1.3
Q123	B	6.2
	C	12.5
	E	5.5
Q124	B	5.5
	C	9.2
	E	6.2
Q125	B	5.5
	C	12.5
	E	4.9
Q501	B	5.4
	C	13.0
	E	6.0
Q502	B	2.6
	C	13.0
	E	0.0
Q503	B	5.7
	C	4.4
	E	7.5
Q504	B	.
	C	.
	E	.
Q701	B	4.2
	C	1.6
	E	3.6
Q702	B	4.2
	C	9.0
	E	3.6
Q703	B	9.0
	C	11.8
	E	8.4
Q704	B	5.9
	C	9.0
	E	6.6
Q705	B	5.9
	C	1.4
	E	5.3
Q706	B	5.9
	C	9.0
	E	6.6

SYMBOL		PB
Q707	B	4.2
	C	11.8
	E	8.6
Q708	B	4.2
	C	9.0
	E	3.6
Q709	B	8.9
	C	11.8
	E	8.3
Q710	B	5.9
	C	9.0
	E	6.6
Q711	B	5.9
	C	11.8
	E	5.3
Q712	B	5.9
	C	9.0
	E	6.6
Q713	B	5.9
	C	10.8
	E	5.4
Q714	B	10.8
	C	10.1
	E	11.4
Q715	B	10.0
	C	9.4
	E	.
Q716	B	.
	C	.
	E	.

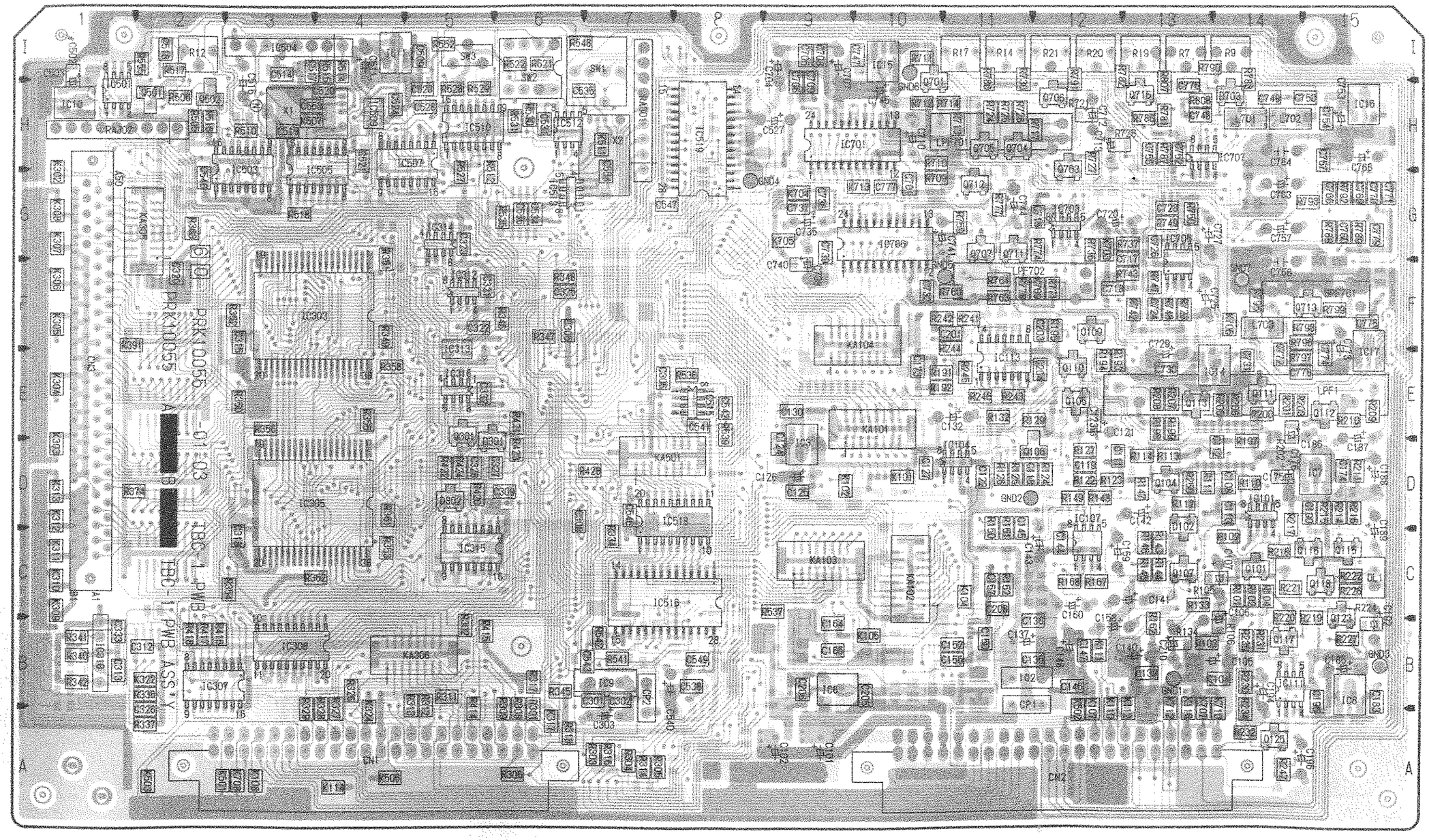
CONNECTOR

SYMBOL		PB
CN1	4A	4.9
	4B	6.0
	11A	12.4
	16B	0.3
	5A	9.7
	5B	0.0
	9A	11.9
	12AB	12.0
	2A	2.4
	2B	0.0
	1A	0.1
	1B	0.0
	13A	4.6
	13B	0.0
	3A	2.6
	3B	0.0
	6B	11.8
CN2	4AB	15.2
	2AB	9.0
	3AB	7.5
	14A	5.3
	14B	0.0
	5AB	-15.1
	1AB	9.0
	15A	9.3
	15B	9.3
	16A	9.3
	16B	9.0
	20A	4.8
	20B	6.0
	12A	5.1
	12B	0.0
	10B	0.1

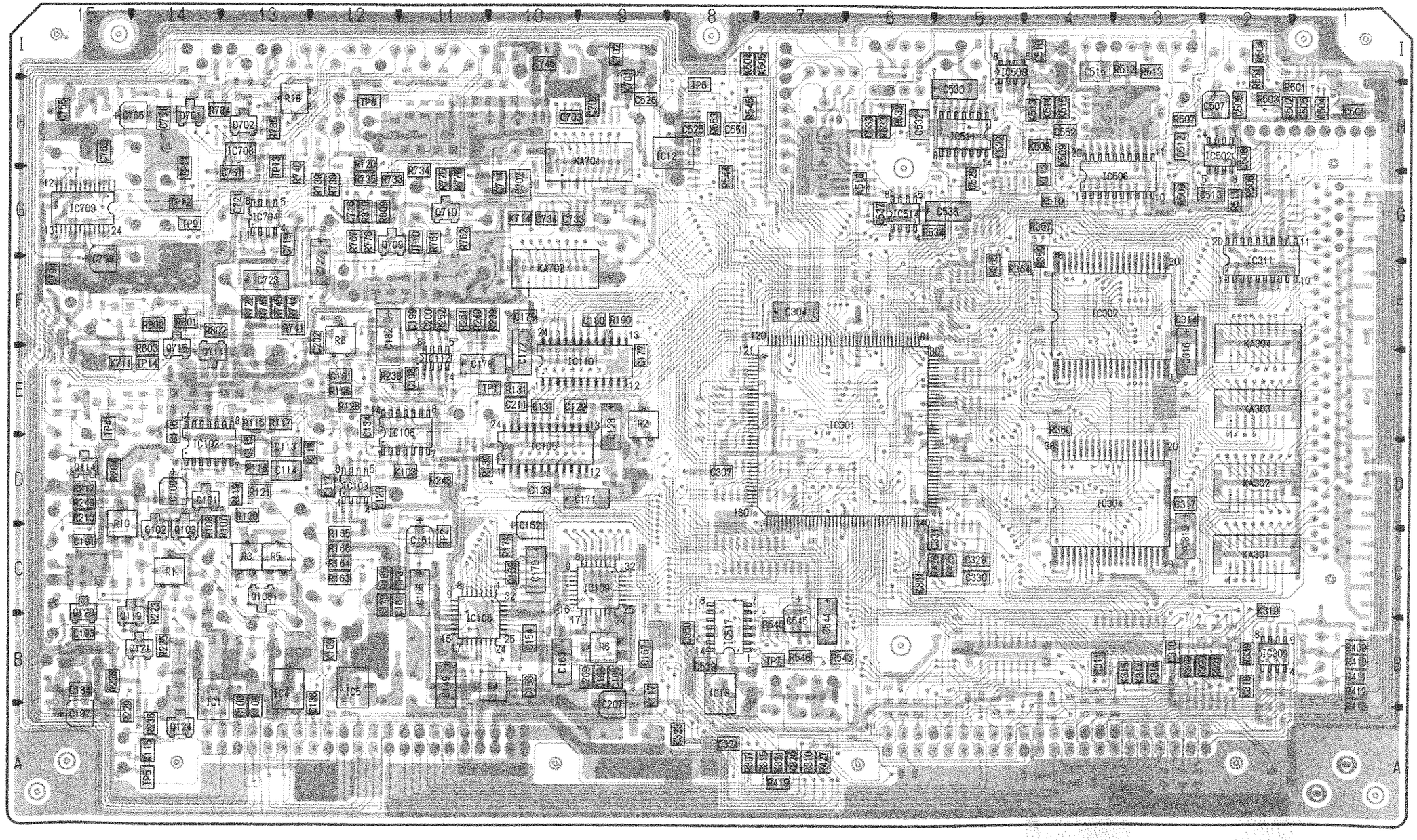
SYMBOL	No.	PB
CN2	11A	2.6
	11B	1.2
	17B	5.1
	7B	1.1
	21A	5.3
	21B	6.0
	22A	5.3
	22B	6.0
	19A	9.4
	19B	6.0

8.10 TBC-1 CIRCUIT BOARD

— Rear —

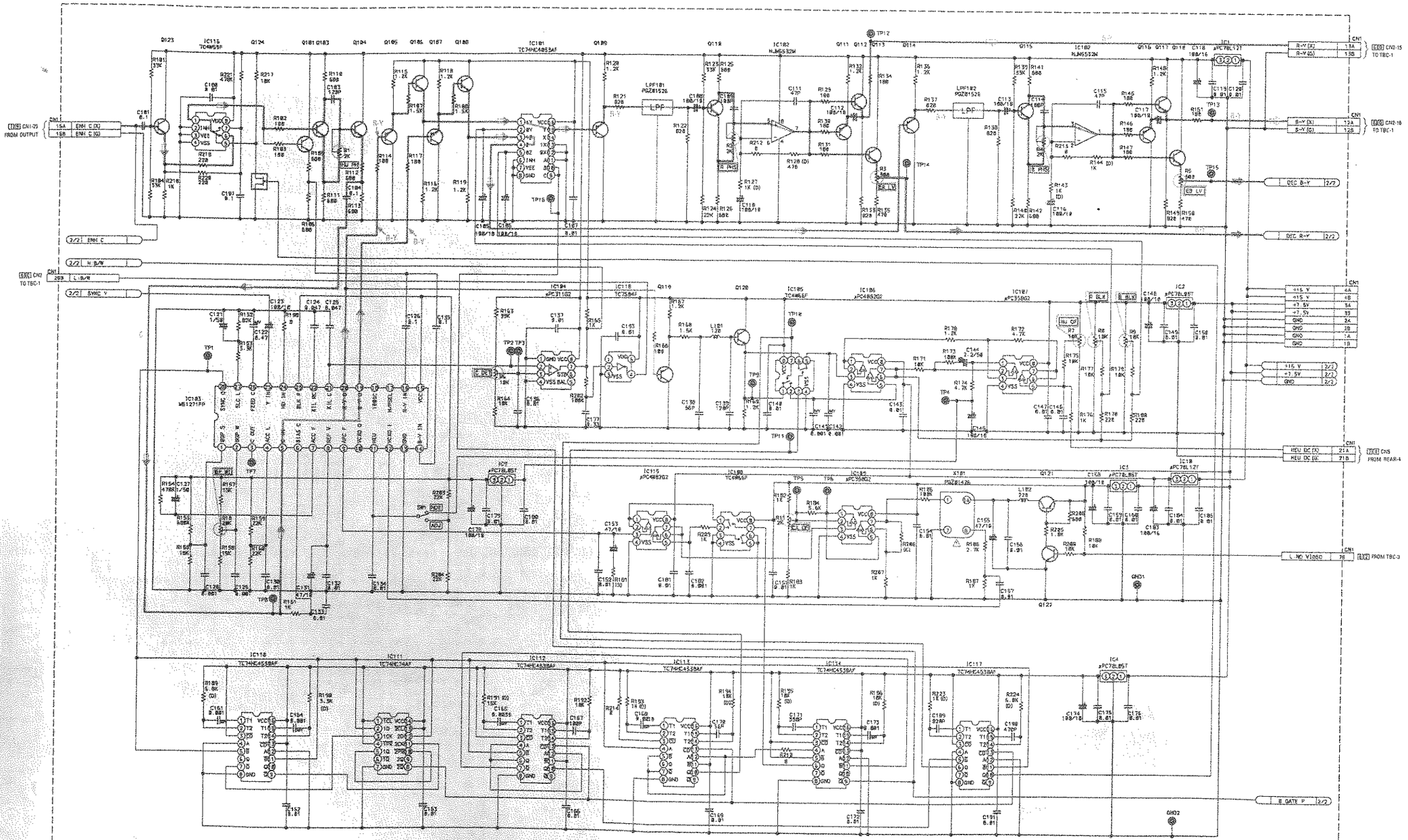


— Front —

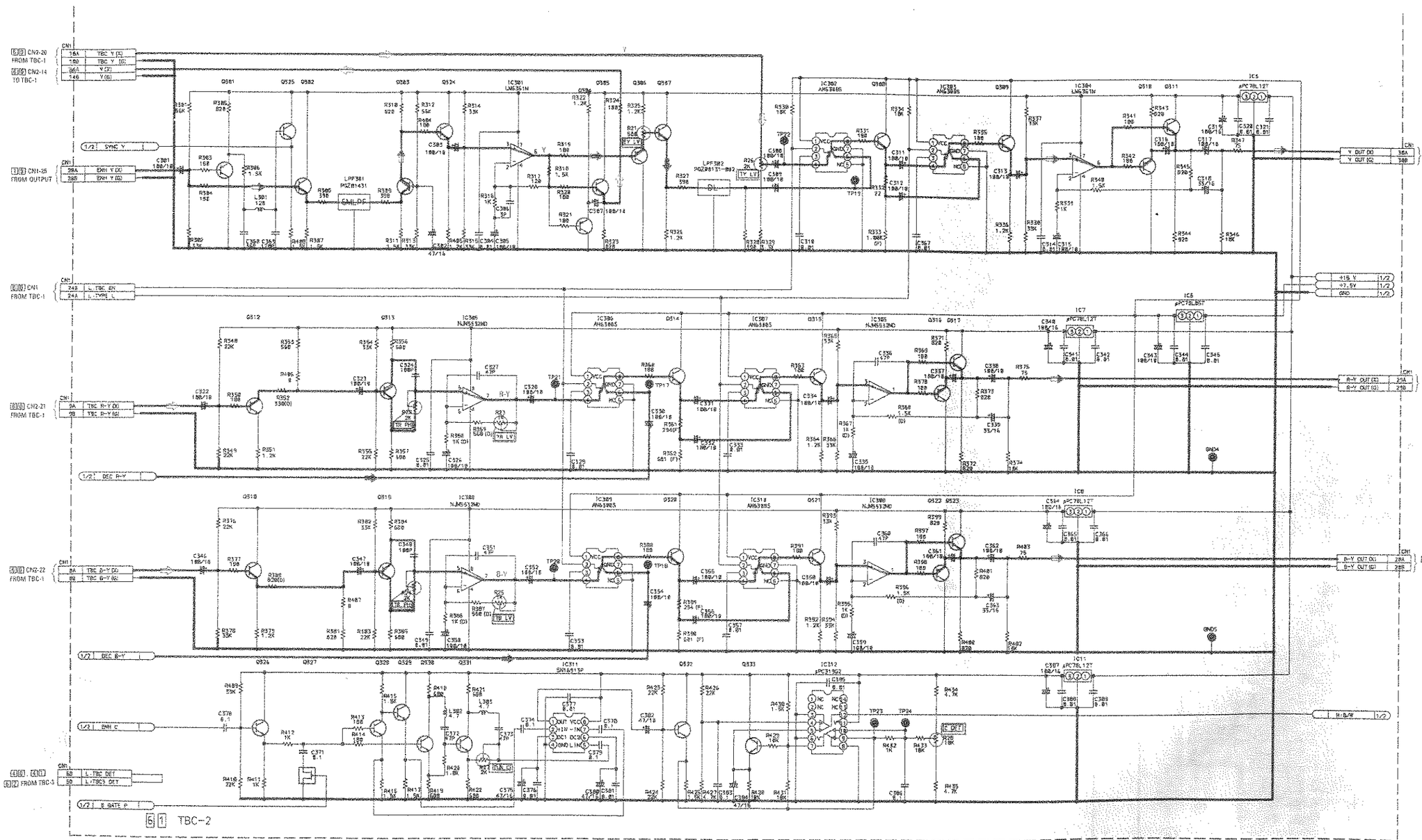

IC709
IC704
IC708
IC702
IC703
IC701
IC12
IC506
IC502
IC507
IC508
IC511
IC514
IC311
IC302
IC304
IC303
IC301
KA704
KA702
KA304
KA303
KA302
KA301
IC110
IC106
IC105
IC103
IC102
IC109
IC108
IC1
IC4
IC5
IC207
IC308
IC517
IC516
IC107
IC101
IC104
IC201
IC202
IC203
IC204
IC205
IC206

8.11 TBC-2 SCHEMATIC DIAGRAM

— SCHEMATIC DIAGRAM (1/2) —



— SCHEMATIC DIAGRAM (2/2) —



TP1 4.5 Vp-p TP16 5.0 Vp-p (15.75 KHz)	TP7 0.26 Vp-p	TP8 0.2 Vp-p	TP9 1.1 Vp-p TP12 0.75 Vp-p TP14 0.48 Vp-p TP17 0.68 Vp-p TP21 0.78 Vp-p
TP10 5 Vp-p TP11 5 Vp-p (15.75 KHz)	TP13 0.7 Vp-p TP15 0.68 Vp-p TP18 0.68 Vp-p TP20 0.68 Vp-p	TP19 0.96 Vp-p TP22 0.98 Vp-p	

— TBC-2

SYMBOL No.	
IC1	
IC2	
IC3	
IC4	
IC5	
IC6	
IC7	
IC8	
IC9	
IC10	
IC101	
IC102	
IC103	

— TBC-2 <61> DC voltage —

SYMBOL No.		PB
I C		
IC1	1	15.2
	2	0.0
	3	12.0
IC2	1	7.5
	2	0.0
	3	5.1
IC3	1	7.5
	2	0.0
	3	5.1
IC4	1	7.5
	2	0.0
	3	5.1
IC5	1	15.2
	2	0.0
	3	12.2
IC6	1	7.5
	2	0.0
	3	5.1
IC7	1	15.2
	2	0.0
	3	12.0
IC8	1	15.2
	2	0.0
	3	12.1
IC9	1	7.5
	2	0.0
	3	5.1
IC10	1	15.0
	2	0.0
	3	12.0
IC101	1	2.2
	2	2.5
	3	2.5
	4	0.0
	5	2.5
	6	2.5
	7	0.0
	8	2.4
	9	4.4
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
IC102	1	3.9
	2	3.9
	3	3.9
	4	0.0
	5	3.9
	6	3.9
	7	0.0
	8	12.0
IC103	1	2.9
	2	2.5
	3	2.5
	4	2.5
	5	2.5
	6	2.5
	7	0.0
	8	4.4
	9	4.4
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
	17	0.0
	18	0.0
	19	0.0
	20	0.0
	21	0.0
	22	0.0

SYMBOL No.		PB
IC103	23	5.1
	24	0.0
	25	3.0
	26	3.1
	27	1.2
	28	4.2
IC104	1	0.0
	2	1.9
	3	2.4
	4	6.0
	5	11.9
	6	11.9
	7	0.2
	8	12.0
IC105	1	2.2
	2	2.5
	3	2.5
	4	0.0
	5	2.5
	6	2.5
	7	0.2
	8	5.1
IC106	1	2.2
	2	2.5
	3	2.5
	4	0.0
	5	2.5
	6	2.5
	7	0.2
	8	5.1
IC107	1	2.6
	2	2.5
	3	2.5
	4	0.0
	5	2.5
	6	2.5
	7	0.2
	8	5.1
IC108	1	3.1
	2	3.0
	3	3.0
	4	0.0
	5	3.0
	6	3.0
	7	0.4
	8	5.1
IC109	1	3.7
	2	3.0
	3	3.0
	4	0.0
	5	3.0
	6	3.0
	7	0.3
	8	5.1
IC110	1	0.0
	2	0.6
	3	0.4
	4	0.0
	5	0.4
	6	0.6
	7	0.8
	8	0.4
	9	0.4
	10	0.8
	11	0.4
	12	0.4
	13	0.5
	14	1.9
	15	0.0
	16	5.1
IC111	1	5.1
	2	4.8
	3	5.0
	4	0.0
	5	4.8
	6	5.0
	7	0.0
	8	4.8
	9	5.0
	10	0.0
	11	4.8
	12	4.8

SYMBOL No.		PB
IC111	13	4.2
	14	5.1
	15	5.1
	16	5.1
IC112	1	0.0
	2	5.4
	3	4.4
	4	4.4
	5	1.5
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
IC113	1	0.0
	2	0.5
	3	0.5
	4	4.5
	5	0.0
	6	0.5
	7	0.5
	8	0.5
	9	0.5
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
IC114	1	0.0
	2	0.4
	3	5.5
	4	0.0
	5	4.0
	6	4.0
	7	4.0
	8	0.0
	9	1.5
	10	4.6
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
IC115	1	3.9
	2	3.9
	3	3.9
	4	0.0
	5	3.9
	6	3.9
	7	0.0
	8	12.0
IC301	1	0.7
	2	0.6
	3	0.6
	4	0.0
	5	0.6
	6	0.6
	7	0.1
	8	12.0
IC302	1	1.9
	2	5.4
	3	5.2
	4	5.2
	5	0.0
	6	5.2
	7	0.7
	8	5.2
IC303	1	5.1
	2	5.2
	3	5.2
	4	0.0
	5	5.2
	6	5.2
	7	0.0

SYMBOL No.		PB
IC303	8	2.7
IC304	1	0.6
	2	0.6
	3	0.0
	4	0.0
	5	0.0
	6	0.7
	7	12.2
	8	0.6
IC305	1	6.7
	2	6.0
	3	6.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	12.0
IC306	1	5.0
	2	5.2
	3	5.2
	4	0.0
	5	5.2
	6	5.2
	7	0.7
	8	5.2
IC307	1	5.1
	2	5.2
	3	5.2
	4	0.0
	5	5.2
	6	5.2
	7	0.7
	8	5.2
IC308	1	6.8
	2	6.0
	3	6.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	12.1
IC309	1	5.1
	2	5.2
	3	5.2
	4	0.0
	5	5.2
	6	5.2
	7	0.7
	8	5.2
IC310	1	5.1
	2	5.2
	3	5.2
	4	0.0
	5	5.2
	6	5.2
	7	0.7
	8	5.2

TRANSISTOR

Q101	B	5.2
	C	12.0
	E	4.6
Q102	B	5.1
	C	5.0
	E	0.0
Q103	B	5.2
	C	7.5
	E	4.6
Q104	B	4.5
	C	12.0
	E	3.9
Q105	B	2.2
	C	12.0
	E	2.8
Q106	B	3.9
	C	0.0
	E	4.5

SYMBOL No.		PB
Q107	B	2.2
	C	0.0
	E	2.8
Q108	B	2.8
	C	5.1
	E	2.2
Q109	B	2.2
	C	0.0
	E	2.9
Q110	B	4.5
	C	8.6
	E	3.9
Q111	B	3.9
	C	0.0
	E	4.6
Q112	B	3.9
	C	12.0
	E	3.3
Q113	B	3.9
	C	12.3
	E	3.3
Q114	B	2.2
	C	0.0
	E	2.9
Q115	B	4.5
	C	8.6
	E	3.9
Q116	B	3.9
	C	0.0
	E	4.5
Q117	B	3.9
	C	12.2
	E	3.2
Q118	B	3.9
	C	12.2
	E	3.2
Q119	B	2.2
	C	0.0
	E	2.9
Q120	B	2.8
	C	5.2
	E	2.2
Q121	B	4.4
	C	5.1
	E	5.1
Q122	B	0.8
	C	0.0
	E	0.0
Q301	B	5.1
	C	0.0
	E	5.7
Q302	B	5.0
	C	12.3
	E	4.4
Q303	B	4.4
	C	10.7
	E	3.8
Q304	B	6.1
	C	0.0
	E	6.7
Q305	B	6.1
	C	12.5
	E	5.5
Q306	B	6.1
	C	0.0
	E	6.7
Q307	B	7.8
	C	12.2

SYMBOL No.		PB
Q307	E	7.1
Q308	B	2.7
	C	12.2
	E	2.1
Q309	B	2.7
	C	12.2
	E	2.1
Q310	B	6.7
	C	0.0
	E	7.4
Q311	B	8.7
	C	12.2
	E	8.1
Q312	B	5.8
	C	8.6
	E	5.2
Q313	B	4.5
	C	8.6
	E	3.9
Q314	B	2.8
	C	8.6
	E	2.0
Q315	B	2.7
	C	8.6
	E	2.1
Q316	B	6.7
	C	0.0
	E	7.3
Q317	B	6.7
	C	12.0
	E	6.0
Q318	B	6.7
	C	12.0
	E	6.1
Q319	B	4.5
	C	8.6
	E	3.9
Q320	B	2.7
	C	8.6
	E	2.1
Q321	B	2.7
	C	8.6
	E	2.1
Q322	B	6.8
	C	8.6
	E	7.4
Q323	B	5.8
	C	12.1
	E	6.1
Q324	B	10.7
	C	12.1
	E	10.1

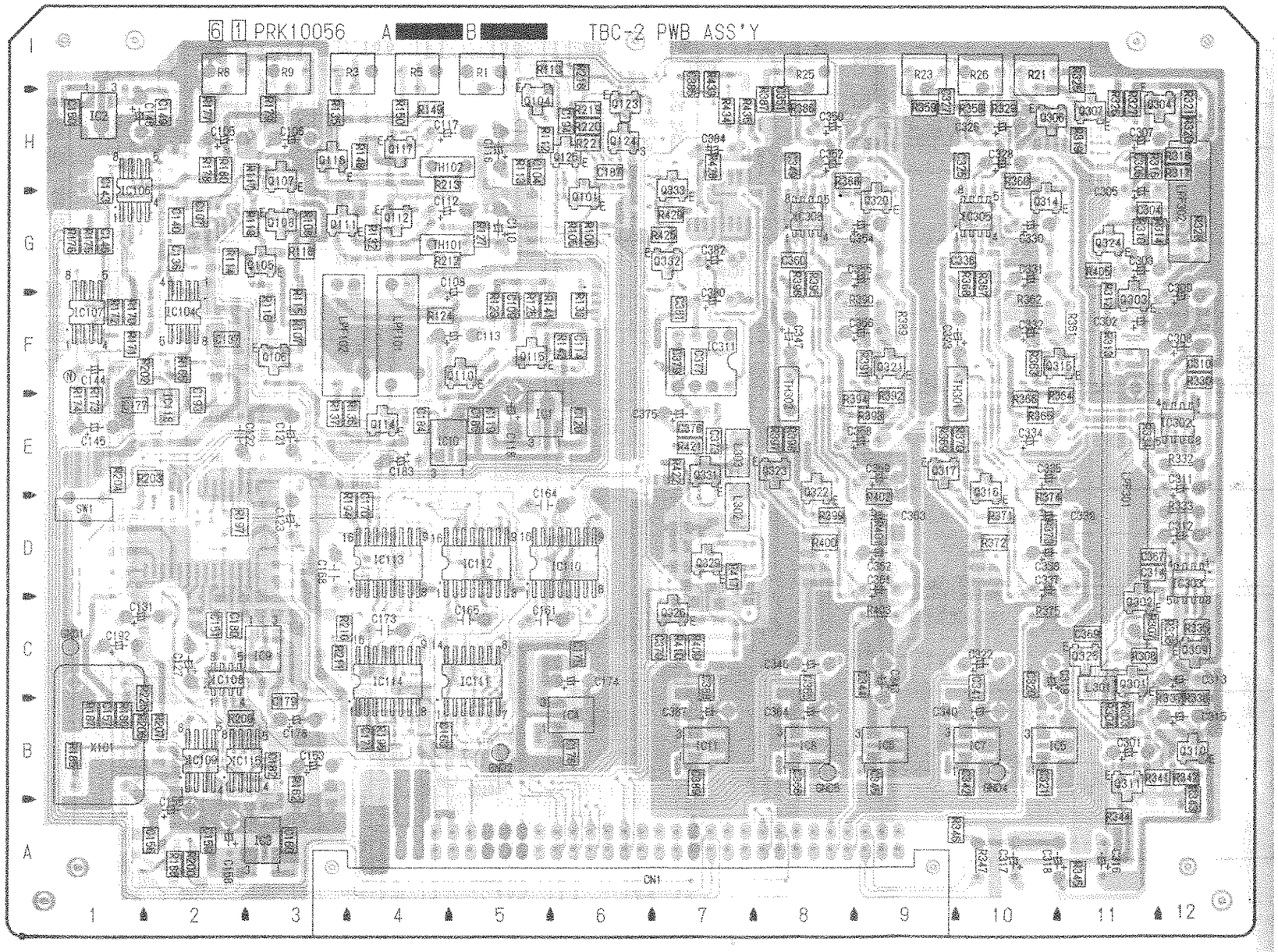
CONNECTOR

CN1	16A	7.0
	16B	0.0
	25B	5.1
	13A	3.3
	13B	0.0
	12A	3.2
	12B	0.0
	4A	5.1
	4B	5.1
	3A	7.5
	3B	0.0
	2A	5.1
	2B	5.1
	1A	0.0

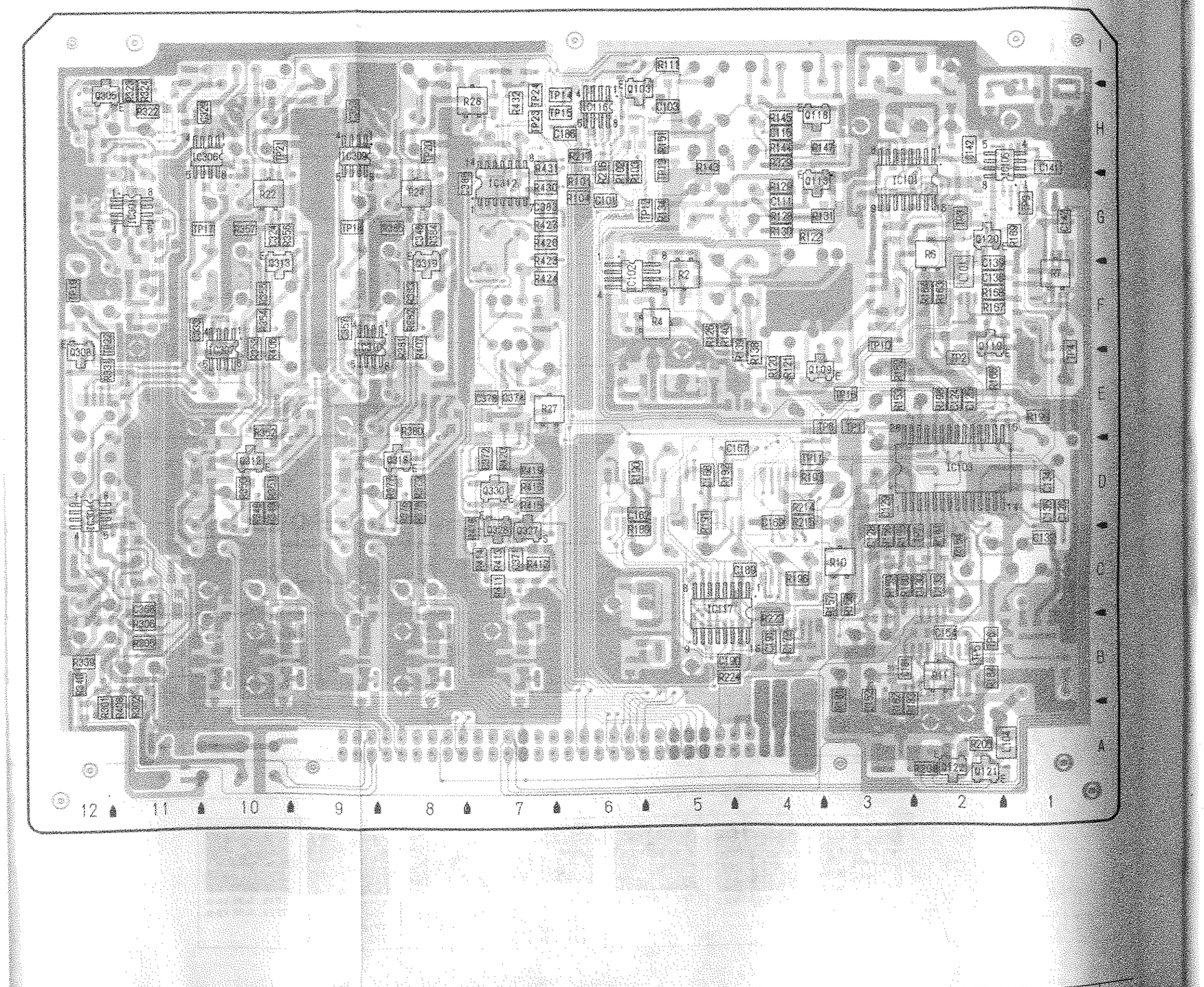
SYMBOL No.		PB
CN1	1B	0.0
	21A	2.2
	21B	0.0
	7B	5.0
	10A	4.9
	10B	0.0
	14A	5.5
	14B	0.0
	20A	3.6
	20B	0.0
	24B	0.5
	24A	0.1
	9A	5.3
	9B	0.0
	8A	5.3
	8B	0.0
	6B	0.0
	5B	0.0
	30A	0.0
	30B	0.0
	29A	0.0
	29B	0.0
	28A	0.0
	28B	0.0

8.12 TBC-2 CIRCUIT BOARD

— Rear —

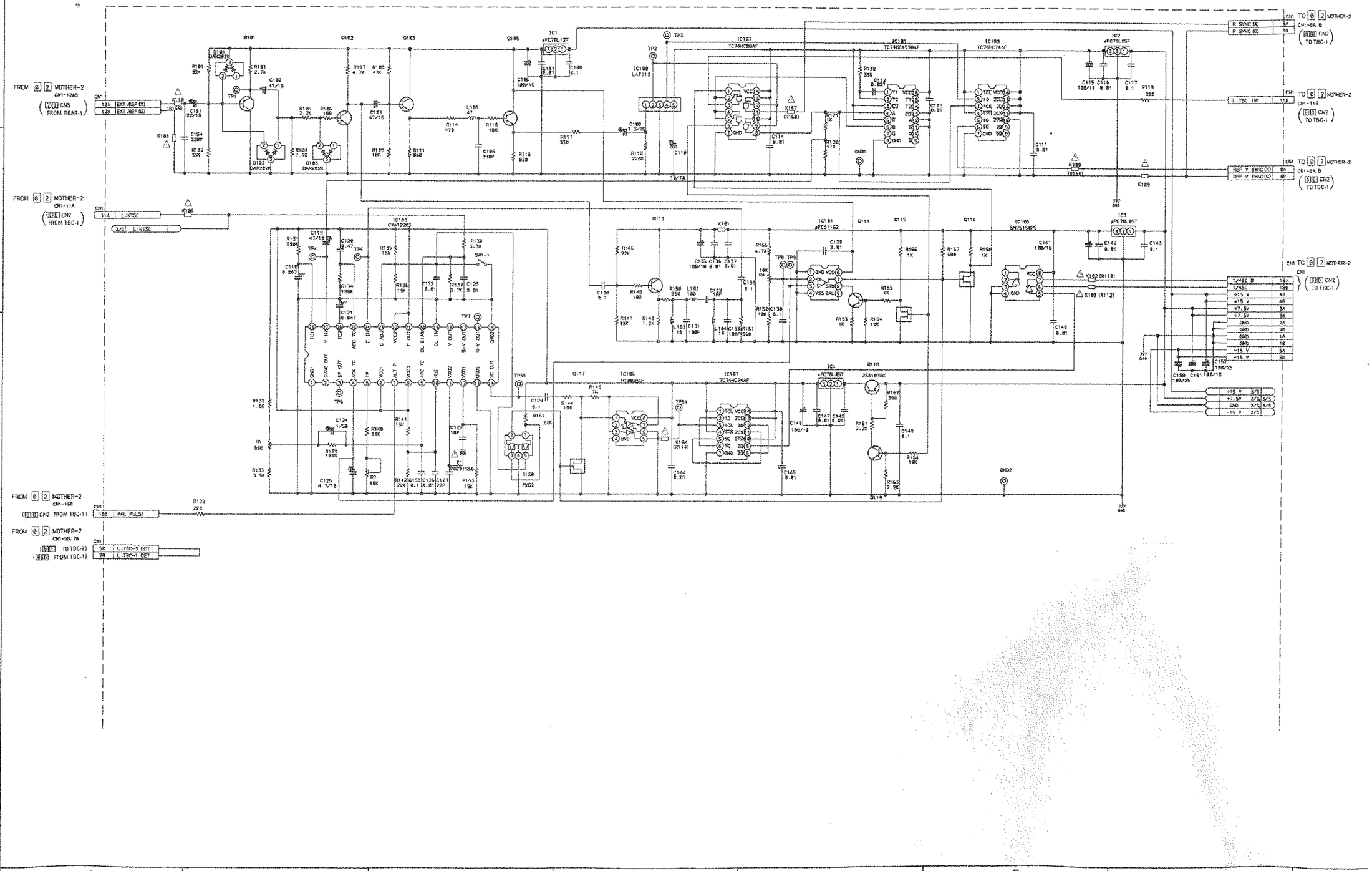


— Front —

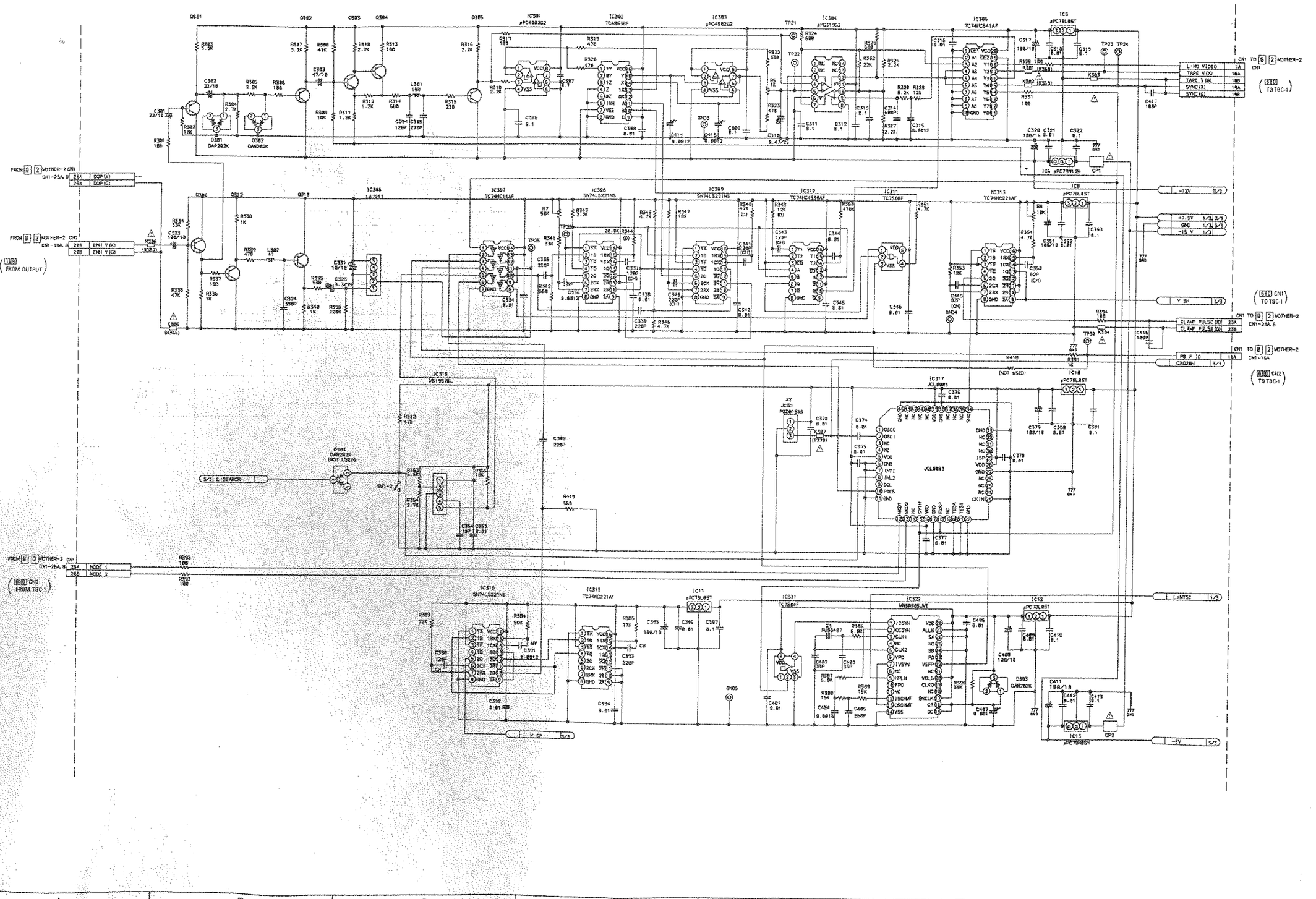


8.13 TBC-3 SCHEMATIC DIAGRAM

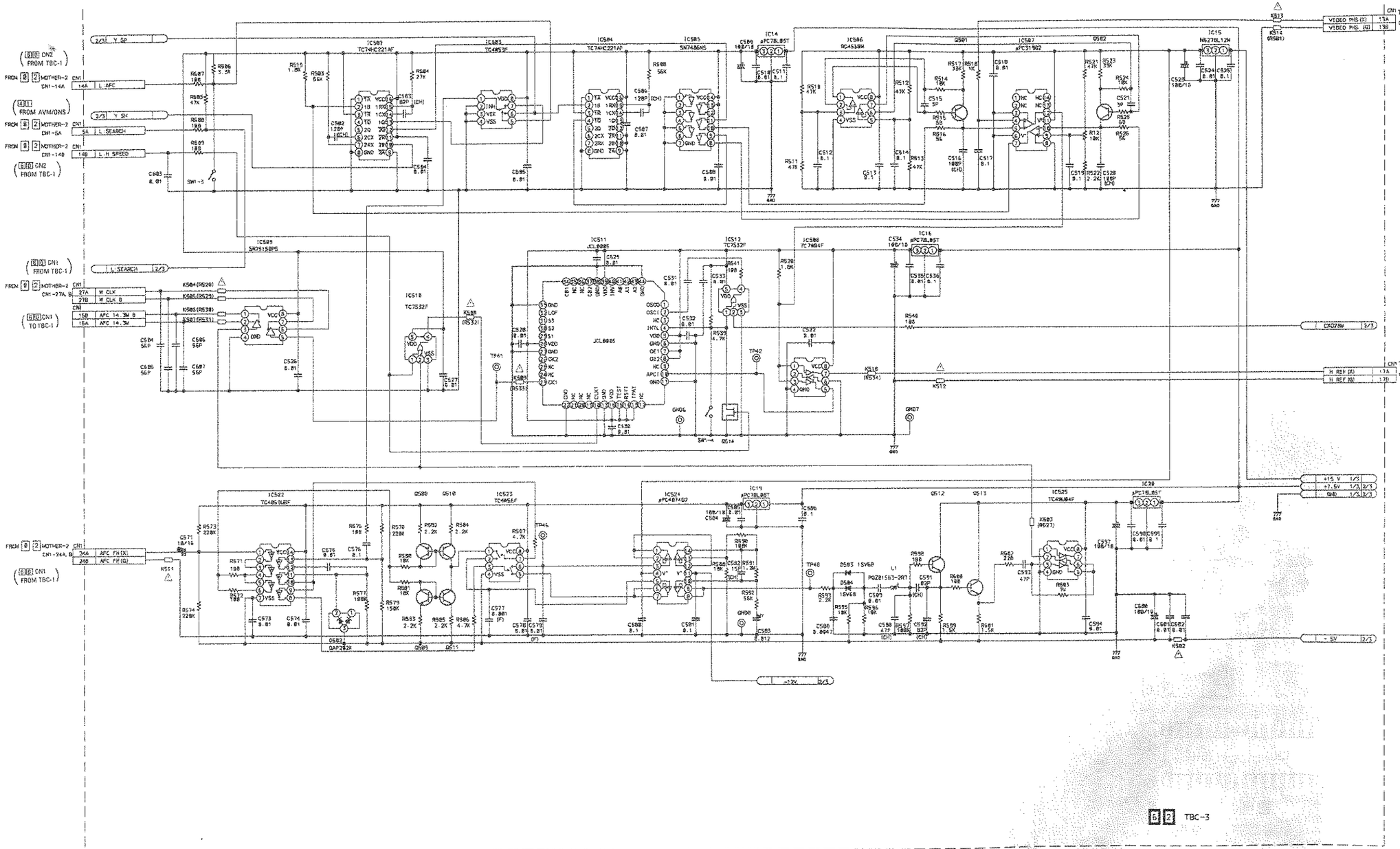
— SCHEMATIC DIAGRAM (1/3) —


FROM 02 MOTHER-2 CN1-12AB (VIDEO CN5 FROM REAR-1)
FROM 02 MOTHER-2 CN1-11A (BASE CN2 FROM TBC-1)
FROM 02 MOTHER-2 CN1-15B, 7B (BASE TO TBC-2) (BASE FROM TBC-1)
TO 02 MOTHER-2 CN1-9A, B (BASE CN2 TO TBC-1)
TO 02 MOTHER-2 CN1-11B (BASE CN2 TO TBC-1)
TO 02 MOTHER-2 CN1-8A, B (BASE CN2 TO TBC-1)
TO 02 MOTHER-2 CN1 (BASE CN2 TO TBC-1)
TO 02 MOTHER-2 CN1-15B (BASE CN2 TO TBC-1)
IC1 μPC78L12T
IC2 μPC78L05T
IC3 μPC78L05T
IC4 μPC78L05T
IC180 LA7213
IC182 TC74HC688AF
IC181 TC74HC4538AF
IC185 TC74HC74AF
IC183 CXA1226S
IC184 μPC511G2
IC185 SM5158PS
IC186 TC74HC688AF
IC187 TC74HC74AF
Q181 DAN282K
Q182 DAN282K
Q183
Q185
Q113
Q114
Q115
Q116
Q117
Q118 2SA1036K
Q119
X1 CSTS0400MG15
SW1-1
R1 680
R2 18K
R133 1.8K
R134 3.9K
R135 15K
R136 15K
R137 2.7K
R138 3.3K
R139 180K
R140 18K
R141 15K
R142 22K
R143 15K
R144 10K
R145 1M
R146 18K
R147 33K
R148 18K
R149 1.2K
R150 560
R151 1.2K
R152 18K
R153 1K
R154 18K
R155 1K
R156 1K
R157 68K
R158 1K
R159 1K
R160 1K
R161 2.2K
R162 39K
R163 2.2K
R164 18K
R165 22K
R166 4.7K
R167 22K
R168 18K
C101 DAN282K
C102 47/16
C103 47/16
C104 3.3/25
C105 390P
C106 100/16
C107 0.1
C108 0.1
C109 3.3/25
C110 0.1
C111 0.01
C112 0.047
C113 0.01
C114 0.01
C115 100/16
C116 0.01
C117 0.1
C118 220
C119 0.1
C120 0.1
C121 0.047
C122 0.01
C123 0.01
C124 1/50
C125 4.7/16
C126 0.1
C127 220
C128 FMB2
C129 18P
C130 0.01
C131 100P
C132 100P/50
C133 100P/50
C134 0.1
C135 100/16
C136 0.1
C137 0.01
C138 0.01
C139 0.01
C140 0.01
C141 100/16
C142 0.01
C143 0.1
C144 0.01
C145 100/16
C146 0.01
C147 0.01
C148 0.01
C149 0.1
C150 100/25
C151 100/16
C152 100/25
L101 47
L102 10
L103 100
L104 10
L105 10
L106 10
L107 10
L108 10
L109 10
L110 10
L111 10
L112 10
L113 10
L114 10
L115 10
L116 10
L117 10
L118 10
L119 10
L120 10
L121 10
L122 10
L123 10

— SCHEMATIC DIAGRAM (2/3) —



— SCHEMATIC DIAGRAM (3/3) —



— TBC-3 <62> DC voltage (1/2) —

SYMBOL	No.	PB
I	C	
IC1	1	15.2
	2	0.0
	3	12.0
IC2	1	7.5
	2	0.0
	3	5.1
IC3	1	7.5
	2	0.0
	3	5.1
IC4	1	1.1
	2	0.0
	3	0.6
IC5	1	7.5
	2	0.0
	3	5.1
IC6	1	0.0
	2	-15.1
	3	-11.9
IC8	1	7.5
	2	0.0
	3	5.1
IC10	1	7.5
	2	0.0
	3	5.1
IC11	1	7.5
	2	0.0
	3	5.1
IC12	1	7.6
	2	0.0
	3	5.0
IC13	1	0.0
	2	-14.6
	3	-5.0
IC14	1	7.5
	2	0.0
	3	3.6
IC15	1	15.2
	2	0.0
	3	12.0
IC16	1	7.5
	2	0.0
	3	5.1
IC19	1	7.5
	2	0.0
	3	5.1
IC20	1	7.5
	2	0.0
	3	5.1
IC101	1	0.0
	2	5.1
	3	5.0
	4	5.0
	5	0.1
	6	5.0
	7	5.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
IC102	1	8.2
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	5.1
	10	5.1
	11	5.1
	12	5.1
	13	5.1
	14	5.1
IC103	1	0.0
	2	0.1
	3	7.0
	4	0.0
	5	0.1
	6	1.1
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
IC103	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	0.0
	21	1.1
	22	1.1
	23	0.6
	24	0.6
	25	0.0
	26	0.0
	27	0.6
	28	1.1
IC104	1	0.0
	2	3.0
	3	0.0
	4	0.0
	5	11.8
	6	9.2
	7	0.0
	8	12.0
IC105	1	3.9
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.6
	8	5.1
IC106	1	0.0
	2	1.1
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	1.1
	8	1.1
IC107	1	1.1
	2	1.1
	3	1.1
	4	1.1
	5	0.1
	6	1.0
	7	0.0
	8	0.0
	9	0.3
	10	1.1
	11	0.0
	12	0.0
	13	1.1
	14	1.1
IC108	1	5.1
	2	5.0
	3	0.0
	4	5.1
	5	2.7
IC109	1	5.1
	2	5.1
	3	5.1
	4	5.1
	5	0.1
	6	5.0
	7	5.0
	8	0.0
	9	5.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	5.1
IC301	1	-0.4
	2	-0.4
	3	-0.4
	4	-11.9
	5	0.0
	6	0.0
	7	4.6
	8	5.1
IC302	1	-0.5
	2	-1.0
	3	0.0
	4	0.0
	5	-11.9
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
IC303	1	-1.3
	2	-1.3
	3	-1.3
	4	-1.3
	5	-11.9
	6	-0.0
	7	-0.0
	8	5.1
IC304	1	0.3
	2	0.0
	3	0.0
	4	-0.1
	5	-1.1
	6	-11.9
	7	0.0
	8	6.6
	9	5.4
	10	7.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
IC305	1	0.0
	2	5.4
	3	4.7
	4	4.7
	5	4.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.5
	11	0.0
	12	0.0
	13	4.7
	14	4.7
	15	4.4
	16	5.0
	17	5.1
	18	0.0
	19	0.0
	20	5.1
IC306	1	3.0
	2	4.6
	3	0.0
	4	0.5
	5	5.1
IC307	1	0.0
	2	5.1
	3	5.0
	4	0.0
	5	0.1
	6	0.5
	7	6.8
	8	6.4
	9	6.4
	10	4.4
	11	4.6
	12	6.3
	13	4.4
	14	5.1
IC308	1	3.0
	2	3.0
	3	4.5
	4	5.2
	5	5.0
	6	5.0
	7	5.0
	8	5.0
	9	5.0
	10	5.0
	11	5.0
	12	5.0
	13	5.0
	14	5.0
	15	5.0
	16	5.1
IC309	1	0.0
	2	4.5
	3	5.0
	4	5.1
	5	4.7
	6	4.8
	7	4.7
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	5.4
	14	0.7
	15	5.1
	16	5.1
IC310	1	0.0
	2	5.5
	3	6.4
	4	5.1
	5	2.9
	6	0.0
	7	4.0
	8	0.0
	9	0.0
	10	1.1
	11	9.0
	12	0.0
	13	4.5
	14	4.6
	15	4.6
	16	5.1
IC311	1	0.5
	2	0.2
	3	0.0
	4	0.2
	5	5.1
IC313	1	5.0
	2	5.1
	3	5.0
	4	5.0
	5	0.0
	6	4.9
	7	4.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	4.2
	14	0.0
	15	0.0
	16	5.1
IC315	1	5.1
	2	7.0
	3	0.3
	4	0.1
	5	5.1
IC317	1	2.4
	2	2.6
	3	0.0
	4	5.0
	5	0.0
	6	0.0
	7	5.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	0.0
	21	0.0
	22	0.0
	23	0.0
	24	0.0
	25	0.0
	26	0.0
	27	0.0
	28	0.0
	29	0.0
	30	0.0
	31	0.0
	32	0.0
	33	0.0
	34	0.0
	35	0.0
	36	0.0
	37	0.0
	38	0.0
	39	0.0
	40	0.0
	41	0.0
	42	0.0
	43	0.0
	44	0.0
IC318	1	0.0
	2	0.7
	3	-4.9
	4	-4.9
	5	6.2
	6	0.0
	7	4.5
	8	5.1
IC319	1	0.2
	2	0.2
	3	2.1
	4	0.0
	5	5.0
	6	0.0
	7	0.2
	8	2.9
	9	9.8
	10	8.2
	11	0.0
	12	-4.0
	13	0.0
	14	0.9
IC320	1	0.0
	2	2.1
	3	1.7
	4	2.3
	5	6.3
	6	3.4
	7	3.0
	8	1.1
	9	6.5
	10	6.5
	11	0.8
	12	0.8
	13	2.6
	14	5.1
IC321	1	0.0
	2	4.7
	3	0.0
	4	0.5
	5	5.1
IC322	1	0.5
	2	0.5
	3	1.0
	4	0.0
	5	0.1
	6	0.1
	7	0.1
	8	0.0
	9	0.0
	10	0.0
	11	0.1
	12	0.8
	13	0.8
	14	0.0
	15	0.0
	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	0.0
	21	0.0
	22	0.0
	23	0.0
	24	0.0
	25	0.0
	26	0.0
	27	0.0
	28	5.1
IC501	1	0.0
	2	3.0
	3	0.0
	4	4.2
	5	0.1
	6	4.4
	7	0.3
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	3.6
IC502	1	0.0
	2	0.0
	3	3.5
	4	0.3
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
IC503	1	3.3
	2	3.1
	3	0.0
	4	0.0
	5	2.2
	6	5.2
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
IC504	1	3.5
	2	3.5
	3	3.5
	4	0.0
	5	2.2
	6	3.4
	7	6.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
IC505	1	0.0
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.3
	11	0.8
	12	0.1
IC505	13	3.6
	14	3.6
IC506	1	5.4
	2	6.0
	3	0.0
	4	0.0
	5	6.0
	6	0.0
	7	5.4
	8	12.0
IC507	1	0.3
	2	0.0
	3	0.0
	4	3.5
	5	5.8
	6	0.0
	7	3.2
	8	0.0
	9	1.5
	10	5.8
	11	12.4
	12	4.6
	13	0.0
	14	0.0
IC508	1	4.5
	2	5.5
	3	4.5
	4	0.0
	5	0.6
	6	0.0
	7	0.6
	8	5.0
IC509	1	1.1
	2	1.1
	3	1.3
	4	1.0
	5	0.2
	6	1.5
	7	0.9
	8	1.1
	9	3.6
IC510	1	3.3
	2	3.2
	3	0.0
	4	1.1
	5	1.3
	6	3.3
	7	0.2
	8	0.2
	9	0.2
	10	1.1
	11	0.0
	12	0.2
	13	0.2
	14	0.0
	15	0.0
	16	3.3
IC511	1	2.5
	2	2.5
	3	4.0
	4	0.1
	5	5.0
	6	5.5
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	0.0
	18	0.0
	19	0.0
	20	2.6
	21	0.0
	22	0.0
	23	0.0
	24	0.0
	25	0.0
	26	0.0
	27	0.0
	28	0.0
	29	0.0
	30	0.0
	31	0.0
	32	0.0
	33	0.0
	34	0.0
	35	0.0
	36	0.0
	37	0.0
	38	0.0
	39	0.0
	40	0.0
	41	0.0
	42	0.0
	43	0.0
	44	0.0
IC512	1	0.1
	2	0.2
	3	0.0
	4	0.2
	5	5.1
SYMBOL	No.	PB
IC522	1	-1.3
	2	-1.8
	3	-0.3
	4	-0.2
	5	-0.9
	6	0.2
	7	-4.9
	8	-4.7
	9	4.8
	10	4.8
	11	-4.4
	12	4.0
	13	-0.9
	14	5.1
IC523	1	0.0
	2	0.0
	3	-4.7
	4	-4.9
	5	0.0
	6	0.0
	7	0.0
	8	5.1
IC524	1	0.0
	2	0.0
	3	0.0
	4	5.0
	5	0.1
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	-4.9
	12	0.0
	13	0.0
	14	0.0
IC525	1	0.0
	2	2.5
	3	2.6

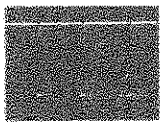
— TBC-3 <62> DC voltage (2/2) —

SYMBOL No.		PB
IC525	4	0.0
	5	2.6
	6	2.6
	7	5.1
	8	5.1
IC527	1	.
	2	.
	3	.
	4	.
	5	.
	6	.
	7	.
	8	.
TRANSISTOR		
Q101	B	6.2
	C	0.8
	E	6.8
Q102	B	0.1
	C	1.0
	E	0.8
Q103	B	3.2
	C	12.6
	E	2.6
Q105	B	2.5
	C	12.0
	E	2.0
Q113	B	2.7
	C	5.0
	E	2.1
Q114	B	4.2
	C	9.5
	E	3.5
Q115	D	4.6
	G	0.0
	S	0.0
Q116	D	0.2
	G	5.0
	S	0.0
Q117	D	0.0
	G	5.0
	S	0.0
Q118	B	7.6
	C	0.6
	E	7.6
Q119	B	0.0
	C	9.5
	E	0.0
Q301	B	0.1
	C	-12.0
	E	0.7
Q302	B	0.0
	C	0.1
	E	0.7
Q303	B	-2.2
	C	4.3
	E	-2.8
Q304	B	4.3
	C	-1.1
	E	4.9
Q305	B	-1.0
	C	-1.0
	E	-0.4
Q306	B	2.7
	C	5.2
	E	2.1

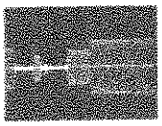
SYMBOL No.		PB
Q308	B	4.1
	C	4.1
	E	4.5
Q309	B	4.1
	C	0.0
	E	4.5
Q310	B	-3.8
	C	-3.8
	E	-4.3
Q311	B	-4.0
	C	-0.1
	E	-4.4
Q312	B	2.1
	C	9.0
	E	2.7
Q313	B	2.7
	C	5.1
	E	2.1
Q501	B	5.4
	C	0.7
	E	6.0
Q502	B	5.4
	C	0.0
	E	6.0
Q508	B	4.1
	C	4.1
	E	4.5
Q509	B	-3.8
	C	-3.8
	E	-4.3
Q510	B	4.1
	C	0.0
	E	4.5
Q511	B	-4.0
	C	-0.1
	E	-4.4
Q512	B	-1.2
	C	5.1
	E	-1.5
Q513	B	-1.6
	C	5.1
	E	-2.0
Q514	D	0.1
	G	5.6
	S	0.0

SYMBOL No.		PB
CONNECTOR		
CN1	12A	0.0
	12B	0.0
	11A	0.2
	16B	1.1
	5B	0.0
	7B	0.0
	9A	5.1
	9B	0.0
	11B	0.1
	8A	5.1
	8B	0.0
	10A	2.6
	10B	-1.5
	4A	15.7
	4B	15.7
	3A	-7.5
	3B	0.0
	2A	0.0
	2B	0.0
	1A	0.0
	1B	0.0
	6A	-15.1
	6B	-15.1
	25A	0.0
	25B	0.0
	20A	3.6
	20B	0.0
	26A	0.2
	26B	0.1
	7A	5.0
	18A	5.0
	18B	0.3
	19A	4.6
	19B	0.0
	23A	0.3
	23B	0.0
	16A	0.0
	14A	3.6
	5A	4.7
	14B	4.1
	27A	0.9
	27B	0.8
	15B	1.1
	15A	1.1
	24A	2.0
	24B	0.0
	13A	3.5
	13B	0.0
	17A	0.6
	17B	0.0

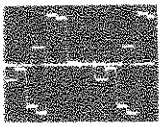
TP1 1.0 Vp-p



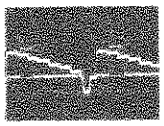
TP2 5 Vp-p
TP4 1.5 Vp-p
TP6 5 Vp-p
TP24 5.1 Vp-p
TP25 5.0 Vp-p
(15.75 KHz)



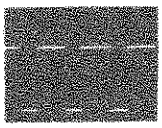
TP5 0.1 Vp-p



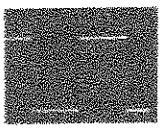
TP7 0.7 Vp-p



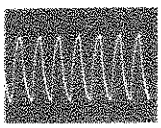
TP21 1.6 Vp-p



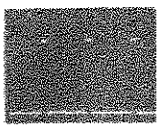
TP26 4.4 Vp-p
(15.75 KHz)



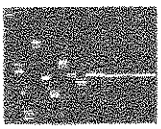
TP30 5 Vp-p
(30 Hz)



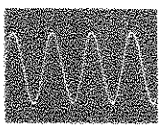
TP41 4.6 Vp-p
(4fsc)



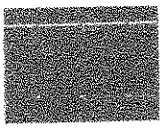
TP42 5.0 Vp-p
(15.75KHz)



TP46



TP50 0.5 Vp-p
(3.58 MHz)

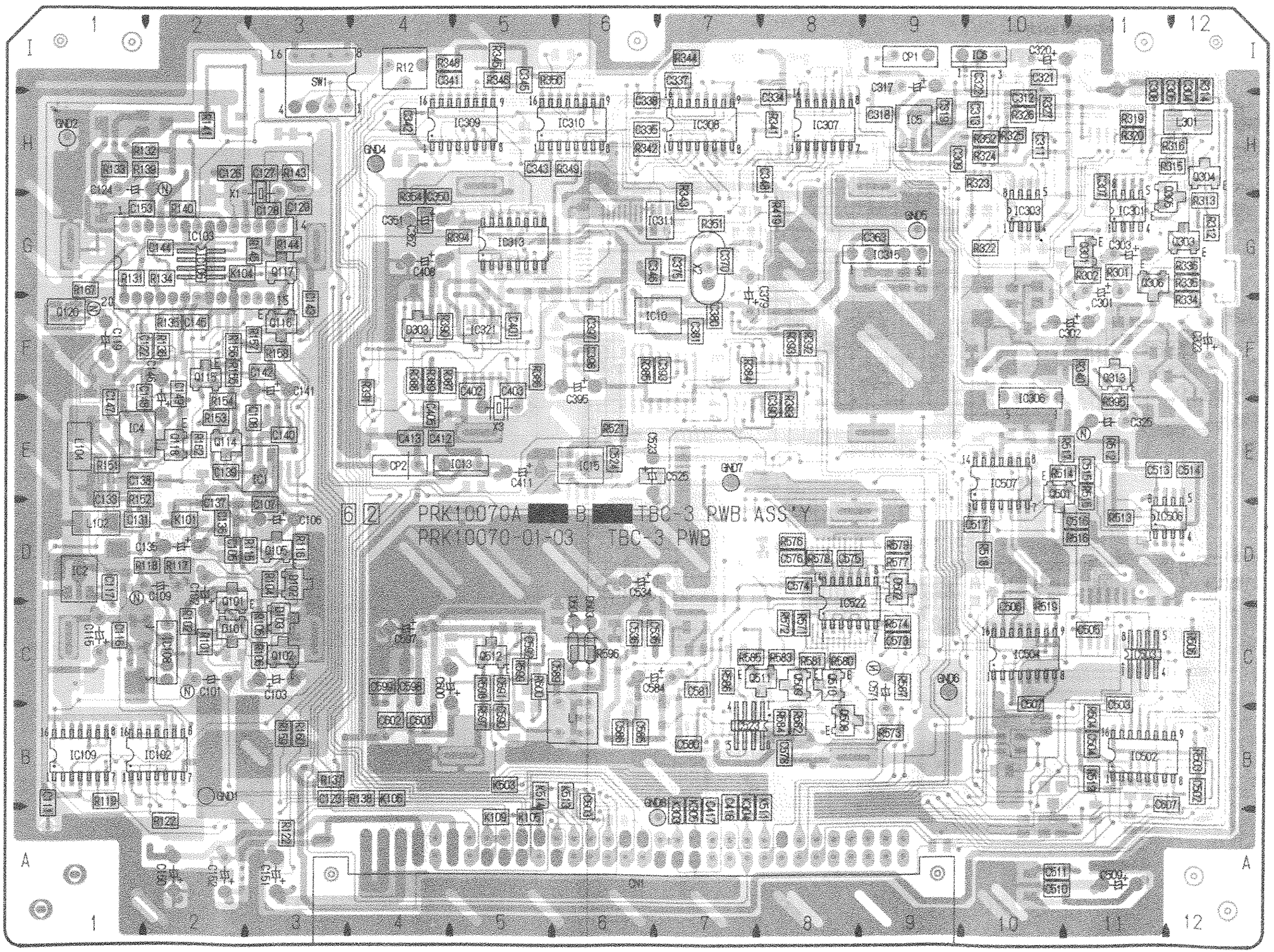


TP3 5Vp-p
(60 Hz)

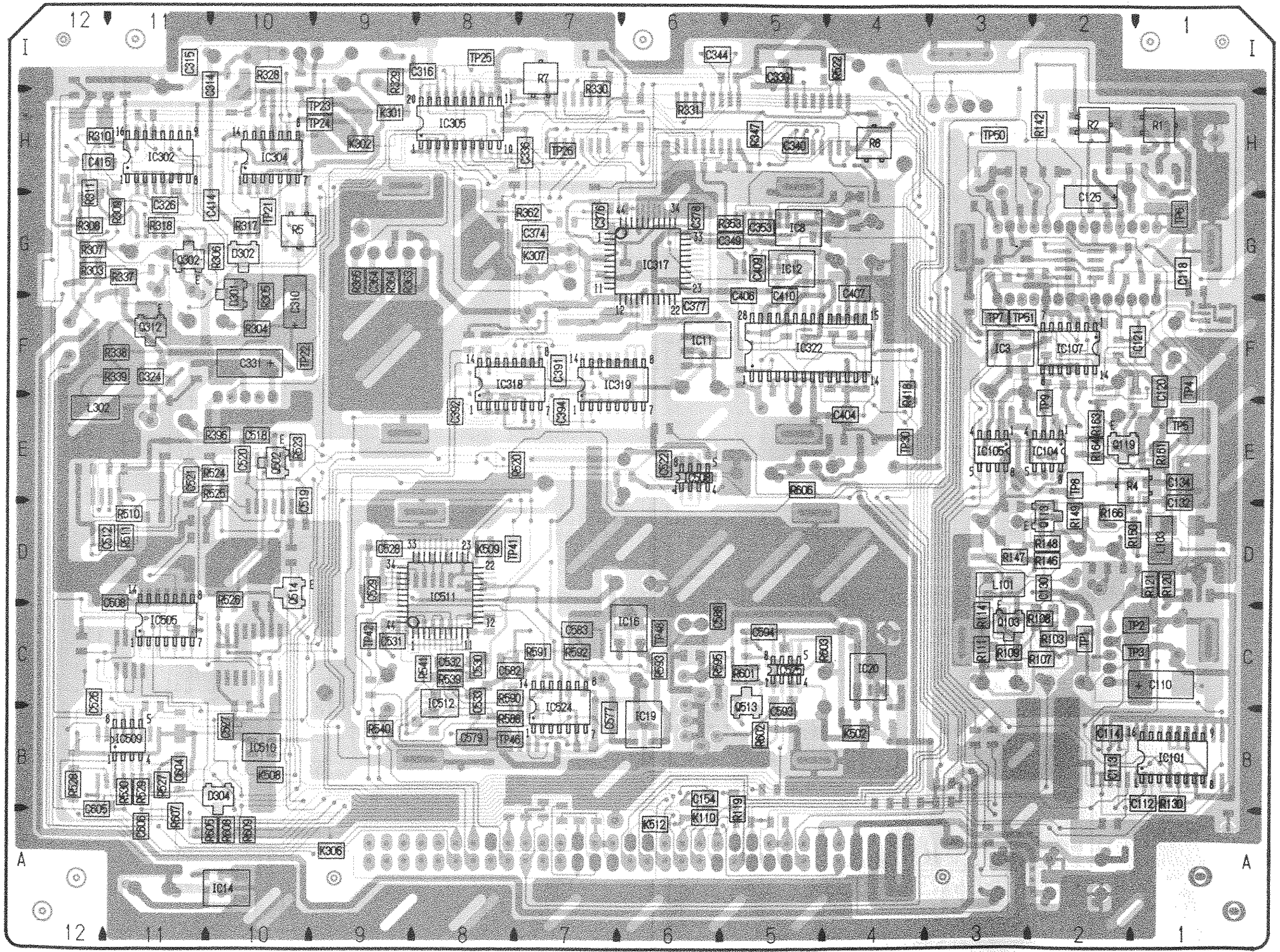
Note:
Waveforms observed at TP1—TP7, TP60 TP51 are those of color bar signal input to the EXT. REF terminal.

8.14 TBC-3 CIRCUIT BOARD

— Rear —

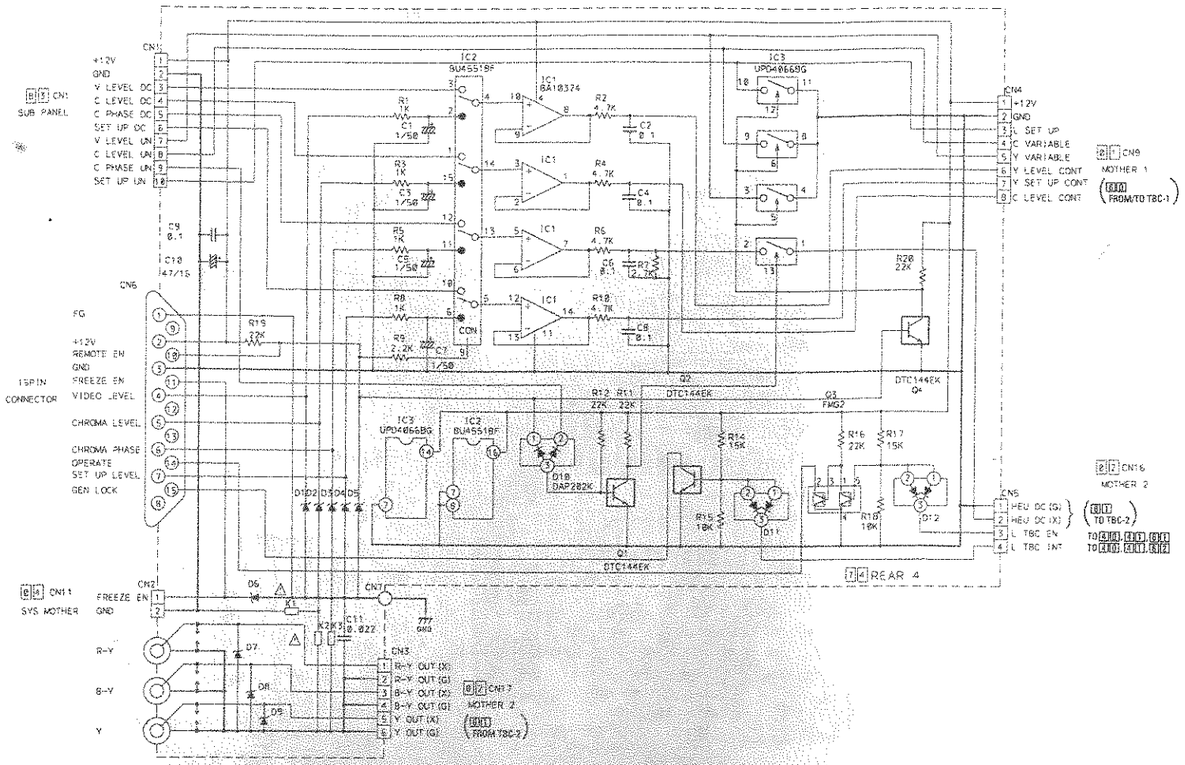


— Front —

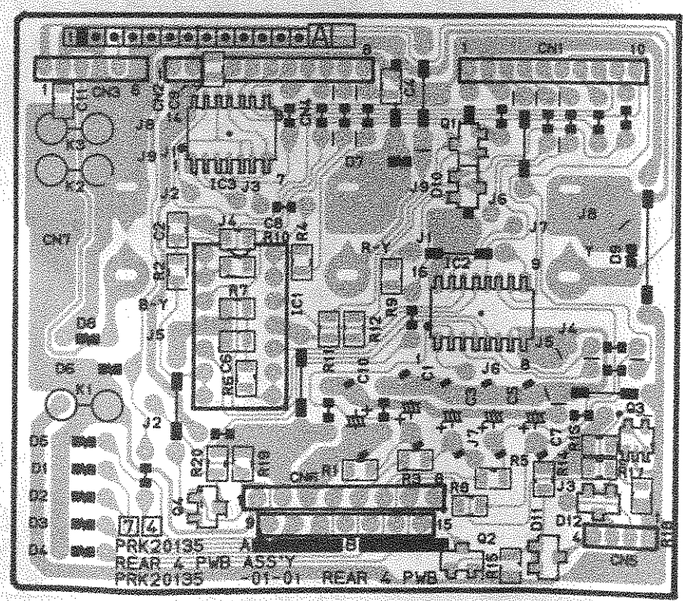

IC302
IC304
IC305
IC317
IC318
IC319
IC322
IC11
IC3
IC107
IC105
IC104
IC101
IC505
IC509
IC511
IC512
IC524
IC16
IC19
IC20
IC14
IC8
IC12
Q302
Q312
Q502
Q503
D302
D304
L302
L101
TP1
TP2
TP3
TP4
TP5
TP7
TP9
TP23
TP24
TP25
TP26
TP41
TP46
TP50
R1
R2
R4
R5
R7
R8
C110
C125

8.15 REAR-4 SCHEMATIC DIAGRAM and CIRCUIT BOARD

— SCHEMATIC DIAGRAM —



— CIRCUIT BOARD —



— DC voltage —

SYMBOL No.		REC	PB
INTEGRATED CIRCUIT			
IC1	1		9.7
	2		9.7
	3		9.7
	4		0.0
	5		4.9
	6		4.9
	7		4.9
	8		5.6
	9		5.6
	10		5.6
	11		12.0
	12		5.1
	13		5.1
	14		5.1
IC2	1		2.6
	2		2.6
	3		9.7
	4		9.7
	5		4.9
	6		2.6
	7		0.0
	8		0.0
	9		12.0
	10		4.9
	11		0.1
	12		5.1
	13		5.1
	14		5.6
	15		5.6
	16		12.0
IC3	1		2.2
	2		1.9
	3		11.9
	4		11.9
	5		12.0
	6		12.0
	7		0.0
	8		11.8
	9		11.8
	10		12.4
	11		12.4
	12		12.0
	13		0.0
	14		11.9
TRANSISTOR			
Q1	B		0.0
	C		8.2
	E		8.1
Q2	B		0.7
	C		0.0
	E		0.0
Q3	1		8.0
	2		0.0
	3		8.0
	4		0.0
	5		1.0
Q4	B		.
	C		.
	E		.
CONNECTOR			
CN1	1		12.0
	2		0.0
	3		9.7
	4		5.1
	5		4.9
	6		11.9
	7		11.8
	8		7.1
	9		12.4
	10		
CN2	1		5.0
	2		0.0

SYMBOL No.		REC	PB
CN3	1		0.0
	2		0.0
	3		0.0
	4		0.0
	5		0.0
	6		0.0
CN4	1		12.0
	2		0.0
	3		12.4
	4		11.8
	5		12.0
	6		9.7
	7		4.9
	8		2.6
CN5	1		0.0
	2		2.6
	3		0.1
	4		0.1
CN6	1		0.3
	2		12.0
	3		6.0
	4		0.0
	5		0.1
	6		0.1
	7		0.2
	8		0.0
	9		0.2
	10		12.0
	11		5.0
	12		0.0
	13		0.0
	14		0.0
	15		0.0

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